

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

Stories of the Week
More Anecdotes
Gags of the Week
Add Women Stories
Verse of the Week
Out of Our Mailbag

Stories of the Week

No dummy was Robert Moore, St. Louis refrigeration serviceman who found himself locked in a tavern basement.

He shouted and pounded on the door. No answer. So he shut off the beer supply to the bar upstairs.

The bartender investigated within seconds, and Moore was freed.

"I hear you are sponsoring Joe Doakes for that Senate vacancy," the late Senator George Moses stabbed at Calvin Coolidge.

"Yes."

"Don't you know that he's a revolving S.O.B.?" flailed Senator Moses.

"Revolving?"

"Any way you look at him," stormed Moses, "he's an S.O.B."

"Well," opined Cal, "there are a lot of them in this country. And they deserve representation in Congress."

"Does he ever talk about his first wife?"

"At first he did. But I cured him."

"How?"

"By describing my next husband."

More Anecdotes

Congressman from Illinois watched Abraham Lincoln get lathered for a shave. Remarked he:

"If anybody had told me that, in a great crisis like this, our people would go to a little-one-horse town, and pick out the homeliest man in the world for our President, I wouldn't believe it."

"Nor would I," quickly agreed Lincoln.

"It is a time when a man with a policy would be fatal to our nation. I never had a policy. I simply do what seems best each day, as each day comes."

A minor Russian diplomat embarked on a tour of Russian satellites.

From Warsaw he cabled: "Everything in good order. Long live free Poland!"

From Bucharest: "Everything in good order. Long live free Rumania!"

From Prague he sent this message: "Everything in good order. Long live free Czechoslovakia!"

On the last leg of his tour he arrived in the United States. A final cable was dispatched:

"Everything in wonderful order. Long live free Suvorov!"

Gags of the Week

To have many hobbies is to know contentment. To refrain from boring others with them is a hardship.

Foreign brides are said to appeal to our soldiers because they are trained to make men think they are important. Whether what this country needs is more men who think they are important is not for us to say.—*Detroit News*.

Backward, turn backward, O Time in thy flight—I've just
(Concluded on Page 8, Col. 1)

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Refrigeration & Air Conditioning News

OF THE INDUSTRY

GENERATION

'Bright Future' of Industry Is Described In Detail

LONG BEACH, Calif.—Some of the factors that make for the "bright future" of the refrigeration and air conditioning industry were detailed at the ARI Educational Conference here by A. J. Hess, president of the American Society of Refrigerating Engineers; M. M. Lawler, vice president, Worthington Corp., and ARI director; and George S. Jones, Jr., ARI managing director.

Following is the essence of their forecasts about new and existing market conditions in the industry:

Hess Talks About New Food Applications --

"Probably the greatest and most interesting developments in the food industry are in the growing and producing portions of the field. We are coming into a new agricultural era participated in by our industry. We are now studying plants and animals under controlled environments to find proper growing conditions and set up comfort charts, if you please.

"Control of environment includes air conditioning. Around the world there are now a number of plant growing research laboratories in which all environmental conditions can be controlled and many more will be constructed in the next decade.

"From these laboratories will come data to enable the world to increase many fold the present farm production with the same acreage and labor now in use. This can mean food for all in spite of expanding populations and what are potential famine areas now such as India and China. This can be one of the major keys to a good, secure, world peace.

"While our industry will participate in the design and construction of plant growing laboratories, we will find a greater commercial outlet in the great luxury food and seed growing greenhouses that will result from this research, for it is only by means of air conditioned space that we can truly control breeding of species and prevent the inroads of strange pollens, the plant equivalent of 'roving males.'

"Animal environment laboratories have established the fact that efficiency of animals varies with the environment, a fact we suspected from our knowledge of humans, who are also animals. Hogs, for example, grow faster and larger in environments around 70° and normal humidities with a falling efficiency curve as the temperature rises to above 90°.

"Dairy animals are also under investigation, and it has been determined that these animals keep themselves warm with additional food over and above the amount they consume at normal temperatures. Closed barns are not a good answer because the emissions of the animals when added to the atmosphere has a detrimental effect on them. Some form of heating and ventilating is the answer, again the justification is economic. Poultry raisers can also economically justify air conditioning in many areas, especially during the chick stage.

"The heat pump is a refrigeration device that is rapidly developing into an important factor in our industry. Heat pumps are usually regarded as air conditioning machines, but now a great potential is developing for the device in

industry. As an air conditioner, success is assured because power utilities must find winter load to balance out the cost of increased transmission facilities now demanded to supply residential summer air conditioning, the year-round heat pump is an ideal answer if proper sources and sinks can be found.

"The use of the heat pump in process industries requiring simultaneous heating and cooling is on the increase and has great engineering possibilities, since the heat can be pumped from the cooling requirement into the heating requirement and thus eliminate the engineering sin of using fuels to produce the desired conditions. Industries with smoke stacks and cooling towers side by side should be regarded as potential sinners in our fight to conserve our precious energy."

Lawler Forecasts Accelerated Air Conditioning Growth

"Our industry has revolutionized the design of office building and hotel structures through the elimination of the need for light courts, cross ventilation, etc., and so has made possible the more economical use of the area enclosed by the walls of the structure.

"Few major office or hotel structures of any size have been built since the end of World War II without air conditioning. For example in New York City since 1947 51 new office buildings have been built or are under construction containing 12½ million square feet of air conditioned space. This has posed a serious problem to the area's 343 reasonably modern structures which are not air conditioned as they must do so in order to retain rent levels, keep their tenants and to keep their personnel from leaving to work in air conditioned offices.

"In 1953 the air conditioning
(Concluded on Back Page, Col. 1)

New Programming at Educational Conference Wins General Approval

LONG BEACH, Calif. — The "new look" in the ARI Educational Conferences and Exhibits, put on display in the first of a new series (1954-1955) of conferences, held at Long Beach March 11-13, seemed to gain the approval of both the exhibiting firms and those in attendance.

All parties seemed generally pleased with the new programming, whereby meetings are held in the morning and early afternoon, and exhibits are kept open
(Concluded on Page 4, Col. 5)

Ben-Hur Offering Refrigerator Line To Distributors

MILWAUKEE — Ben-Hur Mfg. Co., producer of home freezers since 1946, has announced that it is immediately making home refrigerators available to its distributors on a selective basis.

Four new, "compactly-designed" models of the Ben-Hur refrigerator were unveiled at the company's annual distributor meeting held in the Plankinton hotel Sky Room March 13. They are priced from \$199.95 to \$279.95.

General Sales Manager R. C. Graves said that Ben-Hur distributors already established in the refrigerator business will not be required to take on the Ben-Hur refrigerators, but could elect to handle them on a selective basis.

Design of the new refrigerators achieves unusual economy of floor space as a result of a more compact refrigeration unit, according to Graves.

The new design provides 9.6 cu. ft. of "cold-to-floor" food storage capacity in the largest deluxe model and requires only 28 by 27½ in. of floor space and 55 in. of
(Concluded on Page 4, Col. 2)

RACCA Program to Depend on Support of Contractor Firms

LONG BEACH, Calif. — From the discussion on the "Qualified Contractors Program" during the Long Beach Refrigeration Conference it was indicated that RACCA will go ahead with the program, which must be carried out at the local level. It was also indicated that whatever participation in the program there may be by manufacturers or wholesalers will be on an individual basis.

During a panel discussion of the program held during the RACCA regional convention here, wholehearted backing of the program was pledged by Peter Schuman, top assistant to President Martin Durkin of the United Association (AFL union).

Starr Hull, executive secretary of the Refrigeration Equipment Wholesalers Association, and Mark Mooney, vice president of Typhoon Air Conditioning Co., Inc. (who declared himself as speaking only for his own company, and not for any manufacturers' organization), declared themselves as being in support of the general objectives of the program, but did not pledge any specific type of assistance.

Ray Kromer, executive vice president of RACCA, said that the program as outlined "would be of great benefit to the entire industry," but that "I don't see how the contractors can pay the whole freight for it." He said that manufacturers had been approached for aid on the program, but that thus far he did not know what form the assistance might take.

However, Kromer told the contractors gathered at Long Beach that it was hoped to develop a
(Concluded on Page 2, Col. 4)

J. E. Layton Is New President Of Tecumseh

Herrick Is Board Chairman; New Executive Is Former I-H Refrigeration Manager

TECUMSEH, Mich.—Joseph E. Layton is the new president of Tecumseh Products Co. The announcement was made last week by R. W. Herrick, chairman of the board of Tecumseh Products. Layton has been an executive of the International Harvester Co.



J. E. Layton

Herrick previously was both president and chairman of the board, and will now devote his time exclusively to over-all policy matters.

In his capacity as president, Layton will assume the responsibility of organizing and operating the affairs of the company, the announcement stated. Layton has resigned his position as Director of Foreign Relations for the International Harvester Co. with headquarters in Chicago in order to accept this new post.

Herrick also announced the ap-
(Concluded on Page 4, Col. 1)

'Direct Selling' Was A 'Monster' Says 'Madman' Muntz

CHICAGO—Although the creditors' committee for Muntz TV, Inc. and its two subsidiary firms have decided to continue operation of the companies rather than liquidate them, no decision has been reported yet on whether or not Muntz will continue in the air conditioning business.

The creditors' committee was reported to have decided to discontinue Muntz' direct factory to consumer operation and to operate through a distributor-dealer setup. They intend to try to sell Muntz TV sets through department
(Concluded on Page 4, Col. 4)

228 Attend Central States Service Clinic

CHICAGO—"Highly successful" was the verdict of virtually everyone who attended the Central States Refrigeration Service Clinic held at the Morrison hotel here March 12 to 14.

The first such event of its kind, the clinic drew 228 persons from nine states. Although attendance ran considerably less than the pre-meeting estimates of 400 to 500, it was quickly realized that "if any more attended we'd be completely swamped," as one official put it.

All of the more than 100 persons who took the trouble to write out their comments requested that the clinic idea be continued.

At a final business session it
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& AIR CONDITIONING
EQUIPMENT



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American Air Filter Co. Earnings Up In Quarter

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Consolidated net shipments were \$7,251,291 for the three months ending Jan. 31, compared with \$5,693,945 for the 1953 quarter.

Net profit was \$335,829, compared with \$248,000. (Federal excess profits tax was in effect during November and December.)

Net profit equaled 80 cents per share of common stock outstanding, compared with 63 cents for the same quarter of 1953.

The report reflected for the first time sales and earnings of Illinois Engineering Co., Chicago, wholly-owned subsidiary, acquired on Nov. 2, 1953. The 53-year-old Chicago company makes steam heating and power specialties and control systems.

American Air Filter's unfilled order backlog was \$13,500,000 on Jan. 31, compared with \$10,400,000 a year ago. The backlog was \$14,200,000 on Oct. 31, 1953, end of the fiscal year.

Orders for all commercial products of American Air Div. in Louisville, and the Herman Nelson Div. in Moline, Ill., are running 15 to 20% ahead of 1953, Reed said.

New Fields To Conquer

N. J. Contractor Sets Up Separate Division for Motel Air Conditioning

NUTLEY, N. J.—L. Lee Richardson, president of Richardson & Richardson, Inc., air conditioning and heating contracting firm here, has announced the recent establishment of a separate division to be known as Motel Conditioning Co.

The new division will handle all the company's motel contracting work which consists primarily of combination heating and cooling systems. Activities, for the present, will be concentrated along the eastern seaboard.

The new division will employ additional sales engineers to augment the present staff in order to offer prompt sales and engineering service to the many motel projects in the territory.

The conditioning system being employed consists primarily of a combination hot water heating and chilled water cooling system.

"In addition to economy of operation and quietness, one of the most important features is that each guest room is individually controlled (automatically) for both heating and cooling," the company noted.

Several installations have already been completed.

Qualified Contractor Program --

(Concluded from Page 1)

procedure whereby all monies put up by the contractors for the program would be matched on a dollar-for-dollar basis by contributions from the United Association.

Contributions by the contractors will be on an individual, voluntary basis by individual contractors, but that RACCA would strive for local association participation on a 100% basis. Some local groups have signified their intention of signing up on this basis, he said.

A group of 25 or more in any local area subscribing to the program could support the full program for their community at the cost of \$20 per month per member, Kromer said.

The U. A. Viewpoint

Schuman, the United Association representative, declared that union officials had watched closely the progress of the refrigeration and air conditioning industry, and commented "what better time is there than the present to guide the growth of this industry?"

"If there is one thing that could retard the growth and progress of this industry, it would be poorly trained or unskilled mechanics," Schuman said.

"I'm not attempting to suggest who is the most important link in the chain in the growth of an industry, but a chain is no stronger than its weakest link.

"No customer will continually subject himself to shoddy installation and service work. Training and the use of fully qualified craftsmen can save this off. In other fields we have seen disastrous results from the placing of too much reliance on 'handy' men rather than skilled workers.

Apprentice Training 'Key to Low Labor Costs'

"Apprentice training is the key to low labor costs. The United Association was the first to register with the U. S. Department of Labor its joint apprentice training program.

"We offer RACCA our full cooperation and will join with them in a program designed to develop a pool of skilled craftsmen."

Mooney in his talk pointed up the need for emphasizing attention to corrective and educational measures through local, individual effort, rather than trying to master them on the national scale. He likened the situation somewhat to the problem of juvenile delinquency—where most of the problems could have been solved with correct training "at home."

He also described the type of schools and training program offered by Typhoon and other manufacturers, and in answer to a question from the floor, stated that many such schools are not limited to the distributors and dealers for firms which put on the school.

Hull spoke on the need for close cooperation between major segments of the industry, and told how the committees from the various associations work together to handle problems that affect the various segments.

He defined the work and area of responsibility of a REWA wholesaler, and stated that REWA was busy with programs of its own, designed to promote the sale of the industry's goods.

Contractors' Major Objectives

Major objectives of the "Qualified Contractors Program" as outlined by Kromer are the following:

1. To recruit and train competent sales engineers so that contractors will have an adequate number of qualified representatives to serve the public.
2. To assure that an adequate number of qualified contractors are available to absorb production

from old and new manufacturers.

3. To provide training programs for installation and maintenance mechanics that their number be augmented in direct relation to the increased sales.

4. To upgrade the operation of all contractors to meet the RACCA standards.

5. To educate the refrigeration and air conditioning public in the security and safety in their doing business with the qualified contractor.

Plan for Standard Course

A standard course for training refrigeration mechanics has been developed with the cooperation of the United Association and the U. S. Department of Education, Kromer states. This standard training course is designed to give new workers in the field the fundamental knowledge and skill required in servicing commercial and industrial refrigeration equipment.

With local offices of the United Association, this committee will work directly with the apprentice training committee of that association in recruiting and training the number of apprentices that can be absorbed by RACCA members. Where United Association offices are non-existent, cooperative activity with the local vocational school is recommended. Correspondence courses are also being prepared.

Trainees Must Be Sponsored

The training committee of each local association will also be provided with a complete kit for guidance in recruiting, qualifying, and training new sales engineers. These men are not to be trained promiscuously, it is stated. Those accepted for training must be sponsored by member contractors or cooperating manufacturers.

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One is the plan for an advertising program along the lines of that used by the Electrical Contractors Association in promoting the "Certified Electrical Contractor." The other is a proposal to use a direct mail campaign going to names of prospective users of equipment supplied by local individual contractors, but with the mailing being done through the national office.

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New free Marley booklet gives you
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A cork alignment ring controls the air gap around the motor to reduce noise yet keep the motor close to the shell, permitting fast heat transfer to the overload for positive protection. Motor starting relays are current-type on $\frac{1}{2}$ H.P. and $\frac{3}{4}$ H.P., potential-type on heavy $\frac{3}{4}$ H.P. and 1 H.P. A highly-sensitive, 3-terminal type overload protector is furnished. Counterbalanced crankshaft results in far less vibration.

Suction and discharge mufflers are built in. The large suction muffler has low pressure drop contributing to high efficiency. Suction and discharge reeds are Swedish steel. The oil pump has no moving parts and will operate when rotating in either direction.

In a buyer's market where competition is rough, you'll be glad to have the extra features that are in the Copeland welded motor-compressor. It has the

quiet smoothness that results from twin-cylinder design, precisely built. Yet the cost is competitive.

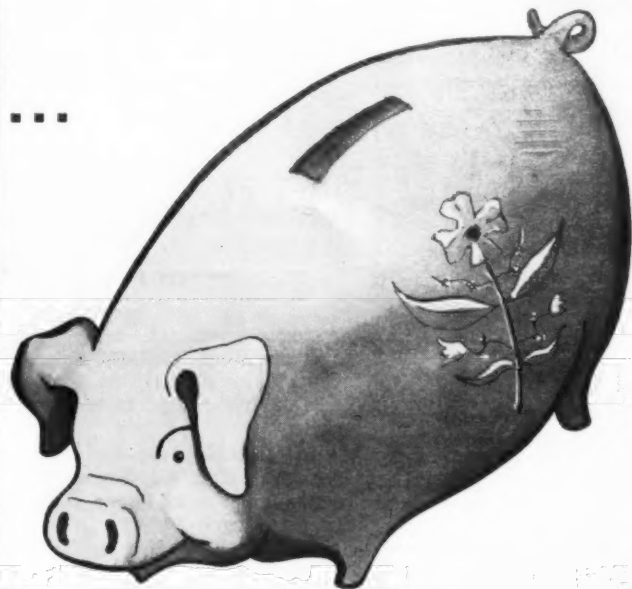
You have another important selling advantage in the cooler-running Copeland unit. The use of F-12 in these motor-compressors can result in as much as 75°F. lower temperatures in motor windings, crankcase, oil and discharge side.

Copeland welded motor-compressors are especially designed to meet the exacting requirements of package air conditioner manufacturers. You'll want to test these models in your units. We particularly want you to check capacities and running temperatures. For that purpose, we provide sample motor-compressors.

Copeland welded hermetic motor-compressors are built in $\frac{1}{2}$, $\frac{3}{4}$, heavy $\frac{3}{4}$ and 1 H.P. sizes.

WHAT USERS' TESTS SHOW

Several manufacturers of window units report "highly favorable" capacities in tests of Copeland welded hermetics. Some manufacturers found the capacities of Copeland welded motor-compressors to be almost 10% higher than others tested. We'll be interested in hearing what your tests show.



Next time you drop a coin in a piggy bank you'll know this traditional symbol of thrift has been helping people save since the Middle Ages. In parts of Holland and Belgium little earthenware vessels, made in the shape of a pig, were given to children at the start of each new year.

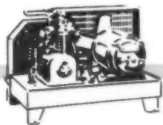
In these primitive piggy banks the youngsters collected copper coins and hoarded them until Christmas, when the banks were opened and the money given to the poor. There is no record of whether hard-pressed parents of those times ever filched a few guilders from Junior's piggy bank to tide them over until payday.



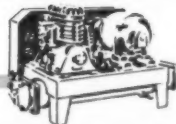
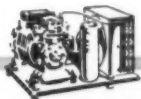
IMPORTANT NOTE

Copeland welded models are an addition to the extensive line of Copelametic, the accessible hermetic. From $\frac{1}{6}$ H.P. through $7\frac{1}{2}$ H.P., inclusive, Copelametic is built to fill an ever-increasing demand for a rugged hermetic that can be serviced on the spot. All Copelametic models, air or water-cooled are available.

Copeland also builds a complete line of belt-driven units and compressors from $\frac{1}{6}$ H.P. through $7\frac{1}{2}$ H.P.



Copeland
DEPENDABLE *Electric* REFRIGERATION



REFRIGERATION UNITS (OPEN-TYPE AND COPELAMETIC) WATER COOLERS

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

Tecumseh Names Layton--

(Concluded from Page 1, Col. 5)
pointment of Paul C. Hohenstein as treasurer of Tecumseh Products Co. Hohenstein recently was controller of the Capco Steel and Engineering Co. in Detroit, and prior to that was with Hudson Motor Car Co. He is a graduate of the University of Illinois.



Layton was graduated from the University of Michigan and was with the Michigan Oil Co. and the Standard Oil Co. of Indiana before joining International Harvester in 1936 as a tool designer. He progressed through various jobs to become assistant general superintendent of the McCormick Works. During World War II he was in charge of the Navy's Aerial Torpedo Plant. Later he became manager and then general manager of the Refrigeration Div. of International Harvester at Evansville, Ind. From this position he was advanced to Director of Foreign Relations, supervising the manufacturing, engineering, and sales of all foreign subsidiaries.

Layton is a member of the American Foundrymen's Association, American Society of Metallurgists, and the American Society of Refrigerating Engineers.

Ben-Hur Freezers, Refrigerators--

(Concluded from Page 1, Col. 4)
head room, Graves pointed out. This is substantially less than the space required by some refrigerators which offer even smaller food capacity, Graves said.

Other refrigerators are offered in 9.4, 7.4, and 7.2-cu. ft. sizes with corresponding space saving, it was stated.

FULL-WIDTH FREEZERS

All of the new Ben-Hur refrigerators have full-width freezer compartments holding up to 36 lbs. of frozen foods in the larger models and 32 lbs. in the 7-cu. ft. units.

In addition to the new refrigerators, Ben-Hur also announced an expanded line of freezers ranging in price from \$197.50 to \$579.50.

A new 18-cu. ft. upright and a special 16.8-cu. ft. chest model joined the Ben-Hur group to bring to seven the number of sizes and types. They are the 4.2 "Handy 4" and 18-cu. ft. uprights, the 9, 13.2, 16.8, and 20-cu. ft. deluxe chest models, and the 16.8-cu. ft. standard chest model.

Up to 630 lbs. of frozen food can be held at zero temperature in the new 18-cu. ft. upright, which occupies kitchen space of only 36 by 28 in. and is only 68 3/4 in. high, it was reported.

Each shelf, as well as the top and bottom of the new Ben-Hur upright, has its own freezing coils

so that the entire food storage compartment functions as one large sharp freezing chamber. One of the shelves is planned as a special frozen pie rack.

COLOR ACCENTED

"Modern styling of all of Ben-Hur's freezers accents the color beauty of Ben-Hur blue trim and ice blue interiors, set off by the new gold, silver, and blue medallion nameplate," the company said. "All exterior lines are in harmony with other modern kitchen appliances."

The new special 16.8-cu. ft. chest freezer embodies all of the principal features of Ben-Hur's deluxe chest models, including "Desert-Dri" cabinet construction, up to 840 lbs. of food storage capacity, counterbalanced "Flex-Flo" cover with a modified safety latch, two-tone blue trim, separate sharp freeze compartment, and the 1954 styling.

Suggested list prices for the entire line are:

FREEZERS			
Model	Size		Price
U-534	4.2 cu. ft. Handy 4 Upright		\$197.50
954	9.0 cu. ft. Deluxe Chest		329.95
1354	13.2 cu. ft. Deluxe Chest		434.95
1754	16.8 cu. ft. Deluxe Chest		479.50
1754B	16.8 cu. ft. Special Chest		396.00
U-5418	18.0 cu. ft. Upright		(to be announced)
2054	20.0 cu. ft. Deluxe Chest		\$79.50
REFRIGERATORS			
Model	Size		Price
R96D	9.6 cu. ft. Deluxe		\$279.95
R94S	9.4 cu. ft. Special		264.95
R74D	7.4 cu. ft. Deluxe		244.95
R72S	7.2 cu. ft. Special		199.95

Central States Service Clinic--

(Concluded from Page 1, Col. 5)
was voted to have another service clinic next year at about the same time preferably in Milwaukee. Many details remain to be worked out, however.

The Chicago event consisted of talks and equipment demonstrations on four topics—residential heating and air conditioning, truck refrigeration, hot gas defrost freezers, and ice cube makers presented, respectively, by the following:

Lee Miles, sales engineer, Mueller Div., Worthington Corp.; John Bergh, assistant service manager, U. S. Thermo Control Co.; Don Taft, service manager, McCray Refrigerator Co., Inc.; and R. E. Niedermeier, general service manager, Ajax Corp. of America.

(Details of the talks will be published in future issues of the News.)

Each talk and demonstration

was given twice during the three-day clinic so that every person could take in each subject if he so desired.

Major problem facing future clinics is that of financing, it was agreed at the business session. Cost of promoting the first clinic was largely supported by the \$700 contributed by 29 chapters and state associations of the Refrigeration Service Engineers Society.

Registration fee of \$1, including 59 advance registrations that didn't "show," brought in \$287.

Majority present, however, thought that future clinics should be run by the same or similar groups rather than ask manufacturers "to take over."

Al Dellheim and R. L. Hendrickson, who served as general chairman and secretary, respectively, of the first clinic, were elected to continue in their posts with the titles of president and executive secretary.

Norge Distributor Orders Up 20% Over Last Year

CHICAGO—Dollar value of distributor orders for the first 60 days of 1954 is up 20% over the same period last year, it was reported recently by R. C. Connell, director of sales of Norge Div., Borg-Warner Corp.

In the same period, more appliance shipments were made direct to dealers than during all of 1953, Connell said.

"On the basis of these figures plus order backlogs and production increases, Norge is looking forward to one of the best years in its history," he said.

The division's new refrigerator line, featuring the "Customatic" refrigerator-freezer combinations, is drawing 25 to 30% more orders than last year's line, it was stated.

Washers, conventional and automatic, are up 15%, and electric water heaters up 10%. Response to gas and electric dryers and the new gas water heaters was also reported good.

Gas and electric range orders are on a par with last year's, but enough orders for the new 30-in. gas and electric models are coming in to cover Norge production through May, according to the company.

Kelvinator Co-Sponsors CBS-TV Show 'Danger'

DETROIT—Kelvinator has added the support of a top-rated week-night television show to its 1954 national advertising campaign, according to Thomas J. King, director of advertising and sales promotion.

King said Kelvinator has joined Block Drug Co. as co-sponsor of the CBS-TV show "Danger," (Tuesdays, 10-10:30 p.m. EST). He said the move establishes Kelvinator in a peak night-time viewing period, with a long-established top-rated show, well in advance of the heavy appliance selling season, which traditionally begins with Easter.

Kelvinator will alternate every other week with Block Drug as principal sponsor, King said. One commercial announcement will be allocated to each sponsor on its off-week.

He said Jinx Falkenberg and her talking puppet, "Katie Small," currently presenting the Kelvinator message on "Omnibus," Sundays from 5 to 6:30 p.m. (EST) over CBS-TV, would do the Kelvinator commercials on "Danger."

ARI Programming--

(Concluded from Page 1, Col. 3)
from the middle of the afternoon until 10 p.m. on Thursday and Friday, and from 1 to 6 p.m. on Saturday.

The program of technical talks drew many compliments for the high caliber of the material presented, and discussion periods often had to be cut short because of lack of time.

Total attendance figure for the conference was said to have gone over the 2,000 mark.

The California States R.S.E.S. convention drew a good attendance, and regional meetings of RACCA and REWA brought people from all parts of the West and Southwest.

Carlson To Distribute Unitaires, Precipitrons

BOSTON—Carlson Electric Co. of Youngstown, Ohio has been appointed wholesale distributor for Westinghouse self-contained "Unitaires" and Westinghouse home "Precipitrons," according to W. B. Cott, sales manager of Westinghouse Electric Corp., Air Conditioning Div.

Headed by E. C. Carlson, the firm has been associated with Westinghouse air conditioning since 1934. One of the largest electrical contracting firms in Ohio, the company has had an integrated air conditioning installation and service department and will expand its sales facilities to broaden its dealer coverage.

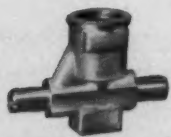
DETROIT SOLENOID VALVES give you

built - in protection

against moisture, dirt, leakage and noise!

**No. 683 Solenoid Valve With Built-In Strainer In All Models**

- Capacities to 5.1 Tons Freon-12.
- Plastic-impregnated waterproof coil.
- Quiet operation—no A.C. hum.
- Rugged forged brass body.
- Connections available for flare, sweat or pipe thread applications.
- Sturdy mounting boss.



683 in forged brass body available with either flare (3/4" S.A.E. for 1/2" x 1/2" reducing nut) or sweat (3/4" or 1/2" O.D.) connections.



Barrel type internal strainer supplied with sweat and pipe thread models.



683 also available in cast brass body with 1/2" female N.P.T. inlet and outlet connections.

Other Detroit Solenoids for Capacities To 50 Tons F-12

No. 681 Capacities to 8.7 Tons F-12



No. 686 Capacities to 20.4 Tons F-12



No. 689 Capacities to 50 Tons F-12

DETROIT CORPORATION

5900 TRUMBULL • DETROIT 8, MICHIGAN

Division of American Radiator & Standard Sanitary Corporation

Representatives in Principal Cities • Canadian Representatives in Montreal, Toronto, Winnipeg—Railway and Engineering Specialties, Ltd.

AUTOMATIC CONTROLS for REFRIGERATION

AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL FILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

Sell the difference in air conditioning that prospects see when they

LOOK UNDER THE HOOD!



This is the year for critical comparison. Air conditioning buyers want to see what they're buying. And a look under the hood of the Carrier Weathermaker* puts them in the best position to buy!

Here's why:

Prospects see in the Weathermaker a refrigerating unit that's rugged, dependable—and looks it! It's sealed against dirt, moisture and air, yet it's readily serviceable.

They see the extra-large filters that trap more dirt, require fewer changes.

They see a cooling coil that's inclined so as to expose more cooling surface to the air.

They see Carrier's exclusive QT fan that moves air gently, quietly . . . and thick insulation all over, not just on the sides.

And everywhere they look, they see top-quality materials and construction—an air conditioner that's been tested by time, proved by performance.

These are looks that sell! They make a Weathermaker dealership well worth looking into!

*Reg. U. S. Pat. Off.



Carrier

air conditioning • refrigeration • industrial heating

CARRIER CORPORATION, 310 S. Geddes Street, Syracuse, New York

It's worth a look to me. Send me the name of my nearest Carrier distributor so I can get the details on a valuable Weathermaker dealership.

Name _____

Address _____

Company name _____

City _____ State _____

G.W. Erdmann Named To Westinghouse Post

MANSFIELD, Ohio — Appointment of G. W. Erdmann, Jr. as merchandising manager of household refrigeration was announced at Westinghouse Electric Appliance Div. headquarters here by S. J. Stephenson, manager, household refrigeration.



G. Erdmann, Jr.

As merchandising manager, Erdmann will be responsible for developing and coordinating all sales programs on Westinghouse refrigerators and home freezers.

The appointment marks Erdmann's return to Westinghouse after an eight-year absence during which time he was associated with Charis Corp. as general sales manager; Landers, Frary & Clark as district manager; and most recently with Associated Baby Services, Inc., as general sales manager.

Erdmann's previous association with Westinghouse was from 1936 until 1946. Prior to joining the company he had been sales manager for L. E. Tompkins, Inc., Cleveland, during which time he had received the highest Westinghouse award for retail refrigerator sales.

His first position with Westinghouse was in advertising for the Electric Appliance Div., Mansfield, and later he became the division's director of sales education.

In 1942, he transferred to the Merchant Marine Div. as assistant superintendent. Two years later he joined the company's headquarters staff of production specialists serving all divisions, and subsequently became staff supervisor. In 1945, he was named the company's manager of production.

Eger Succeeds Mintz as Admiral Advertising V.P.

CHICAGO — Edmond I. Eger, vice president for the past year of Russel M. Seeds Co., Chicago advertising agency, has been appointed vice president-advertising of Admiral Corp., it was announced recently by Ross D. Siragusa, president.

Eger replaces Seymour Mintz, who resigned to become president of CBS-Columbia.

For 25 years, Eger operated his own Chicago advertising agency, Cruttenden & Eger, which he opened after graduating from the University of Chicago. He has handled the Admiral advertising account almost from the company's inception 20 years ago.

Mintz was appointed advertising director of Admiral in 1944. He was elected vice president in charge of advertising in 1952. In his new post, he succeeds David H. Cogan, who will resign as president of CBS-Columbia and as a vice president of its parent firm, the Columbia Broadcasting System.

Blood Chilling Process May Extend Operating Time for Heart Surgery

NEW YORK CITY — A blood chilling process that may give surgeons an hour or more to work on diseased hearts (present limit is about eight minutes) is being developed by Dr. John J. Osborn of the New York University medical college here.

Dr. Osborn has already successfully used his process on dogs and thinks it may work on humans.

His process combines the two present methods of heart surgery. One is the use of artificial hearts and lungs to take over the body's blood pumping system while the heart is being operated on. The other is to cool the patient's body to 70° F. to reduce oxygen needs.

In his experiments on dogs, Dr.

Osborn draws blood from a vein and passes it through the mechanical heart and lung where it picks up oxygen. Then the blood is pumped through a refrigerated coil where it is chilled to near the freezing point. Then it is returned to the animal's body and reduces the general body temperature to 51° F.

While in this very cold state, the dog's breathing stops and the heart beat disappears, Dr. Osborn said. But when the blood is rewarmed, normal life gradually returns.

This is claimed to be the first time that a combination of the two present methods of heart surgery has been devised.

Conditioned Air Co. Chartered

NEW ORLEANS — Charter of incorporation has been granted Conditioned Air Co., Inc., general air conditioning, 1901 Constance St., listing capital stock of \$20,000.

Edco Distributing Co. Formed To Handle RCA In Fresno Area

CAMDEN, N. J. — The Edco Distributing Co. has been appointed distributor of RCA and RCA Victor products in the Fresno, Calif. trading area, it was announced recently by Paul A. Barkmeier, vice president of distribution, Radio Corp. of America.

The Edco Distributing Co. is a newly formed organization which will make its headquarters at 2930 Butler Ave., Fresno. This location is now occupied by the Fresno branch of the Leo J. Meyberg Co., which will continue to handle RCA and RCA Victor products in this area until the new firm takes over.

The Leo J. Meyberg Co. in San Francisco will continue to distribute RCA and RCA Victor products throughout northern California.

President and founder of the Edco Co. is Edward Sarnoff, who

for the past few years has been vice president of Radio and Appliances Distributor, Inc., RCA Victor distributor in E. Hartford, Conn.

Airtemp Washington, D.C. Region Headed by Butler

DAYTON — Appointment of E. O. Butler as regional manager for the Chrysler Airtemp Washington, D. C. sales region has been announced by J. F. Knoff, Airtemp vice president in charge of sales.

Butler succeeds Earl Palmer, who has joined Airtemp's merchandising staff here. Prior to joining Airtemp in 1952, as district manager, Butler was associated with engineering and sales activities in the heating and air conditioning field in New York City.

Since 1953 he has held the position of Airtemp executive engineer on government contracts.

I, TOO, WANT TO CASH IN WITH *Servel* BACKED IN 1954 WITH ADVERTISING AND

Attention Servel Distributor!

- ☐ Please send me complete merchandising and sales-making material on all Servel products.
- ☐ Tell me how to tie in with the giant spreads on all Servel products breaking next month in LIFE, SATURDAY EVENING POST—America's top magazines!
- ☐ Show me how to take full advantage of Servel's complete local promotional help that will bring prospects right into my store!



☐ *Servel* — the only refrigerator that makes ice "cubes" without using trays, and puts 'em in a basket—automatically!

Only Servel refrigerators give you these top sales-making features:

- Electric or Gas models!
- No messy ice trays!
- Separate freezer compartment!
- Automatic defrosting!
- Adjustable shelves!
- Roomy door shelves!
- Right-temp butter keeper!
- Up to 10-years warranty!
- Trip-saver door handle!
- Refrigerator, freezer, ice-maker in 1!

E-Z-SEE

LIQUID INDICATOR



NEW FLO INDICATOR FLAP SHOWS ALL FLOW CHANGES

Analyze flow, function of expansion valve, by means of E-Z-SEE sensitive flap, instantly responsive to variations in flow. Positively leak-proof — hundreds of thousands in use.

Available at Wholesalers everywhere

REMCO
INCORPORATED
ZELLENOPLE, PA.

Frozen Food Distributor Finances Freezer Sales

NEW YORK CITY—A frozen food distributor here has recently organized a financing firm to finance the combined sale of frozen foods and freezers by food plan operators and appliance dealers.

The move is reported to have been made to bolster the firm's frozen food volume to food plan dealers. This volume has been decreasing, it is said, because of the tight credit situation.

The new firm is called Tri-State Discount Co. and will operate in the states of New York, New Jersey, and Connecticut. It is headed by Stanley Weintraub, who is also president of Puritan-Beinecke Frosted Foods.

The finance plan offered will allow dealers to sell both food and freezer in one financial package. Four months will be allowed on

food payments and up to three years for the freezer.

Weintraub asserted that he is in the frozen food business and intends to stay there. He does not sell freezers. He is offering the financing service to any dealer who wishes to participate.

Majestic Tags Range Line With 'Coronation' Label

LIMA, Ohio—To avoid its electric range being confused with certain other ranges presently marketed with similar trade-marks, the Majestic Major Appliance Corp. here has announced that its new line of electric ranges will be marketed under the name "Coronation."

The new line includes four models starting at \$169.95 list for a 21-in. range with four surface units. The highest priced unit in the line is a completely automatic 39-in. range listing at \$319.95.

Illinois-Missouri Appliance Dealers Plan To Organize

ST. LOUIS—Initial steps were taken toward organizing the Illinois Television and Appliance Dealers Association in a meeting of 23 industry representatives which was held at the Kings-Way hotel here recently.

Temporary chairman of the group is Jerry Mundell, Mundell Appliance Service, St. Louis. Other temporary officers include Vice Chairman Clarence Newberry, Newberry Radio Co., St. Louis, and Secretary Al Applegate, Applegate TV & Appliance Co., East St. Louis, Ill.

A. W. Bernsohn, managing director of the National Appliance and Radio-TV Dealers Association was guest speaker at the meeting. Plans were discussed toward the further organization of the local association, which will be a NARDA affiliate.

Union Appliances Adds S. W. Missouri Territory

EVANSVILLE, Ind.—The territory served by Union Appliances, Servel distributor at Independence, Kans., has been enlarged to include the Springfield and Joplin areas in southwestern Missouri, according to Neal E. Schuman, field sales manager for the appliance division of Servel, Inc.

Parker Willett is general manager of Union Appliances. The organization's headquarters in Independence are located at 11th and Parkhurst.

Union Appliances' territory originally consisted of 13 counties in southeastern Kansas. It will now include 26 additional counties in southwestern Missouri, it was indicated.

Willett has indicated that a branch will be established at Springfield, with full warehousing and display facilities.

In Omaha . . .

21 Appliance Dealers Offer Free Latch Removal

OMAHA, Neb. — Twenty-one Omaha appliance dealers who are members of the Nebraska-Iowa Electrical Council have pledged to lend their services to Omahans in complying with a new unused icebox ordinance that became effective this year.

The ordinance provides a maximum fine of \$100 or 90 days in jail for having on or about the premises a discarded or abandoned icebox, refrigerator, or similar container with a snap lock. These appliance dealers will have their service departments remove free of charge any lock or lid from such containers.

American Appliance Co., Bennett Furniture Co., Benson Implement & Appliance Co., Best Appliance & TV Co., Cappy's Sporting Goods, Church Electric Co., Davidson's Furniture Co., Howell Furniture Co., Laird & Hipke Electric, Sol Lewis Co., Sears Roebuck & Co., Lux's, Al Mahan Appliances, Minne Lusa Radio & Appliance Co., Modern Appliance Co., Montgomery Ward & Co., National Tire & Supply Co., Orchard & Wilhelm Co., Paramount Radio Shop, Philips Department Store, and Union Outfitting Co.

. . . Toledo Aids Fight

Utility Will Make Locks Inoperable on Iceboxes

TOLEDO—An offer by Toledo Edison Co. to make inoperable locks on unused iceboxes stored outside of dwellings and buildings has resulted in only one voluntary response since Feb. 1, a company spokesman said.

The company's meter readers, instructed to be on the lookout for abandoned iceboxes or refrigerators, reported they had seen 13.

Form letters explaining that the company would drill the lock so the latch cannot shut on the iceboxes were sent to each address where the iceboxes were seen. Only one person returned the self-addressed postal card. An appliance mechanic was sent to drill the lock.

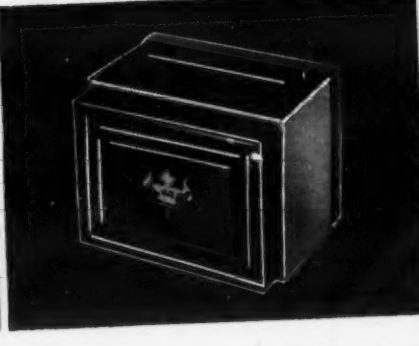
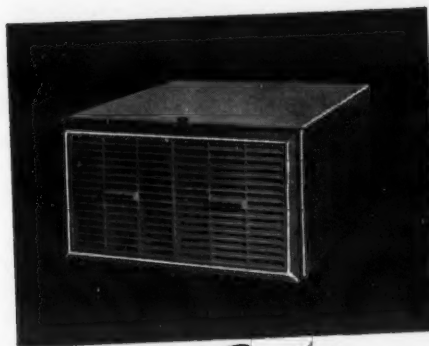
In August, a similar offer was made by the Toledo chapter, Refrigeration Service Engineers Society. The chapter received less than a dozen calls, most of them pertaining to iceboxes owned by neighbors of the callers.

In most instances, the owners refused to permit the engineers to touch the boxes, saying they planned to sell them.

Franklin Appliance Formed

BUFFALO — A business name has been filed in the Erie County clerk's office for the Franklin Appliance Service, 1656 Elmwood Ave. here, by Wilbur S. Franklin.

—THE ONLY COMPLETE REFRIGERATION LINE MERCHANDISING OF SMASHING IMPACT!

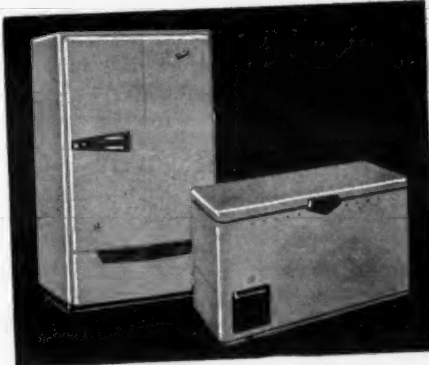


☐ Servel the QUIET room air conditioners—most beautiful ever built!

Budget priced ¼ H.P. Servel only \$299.95! With full mark-up! Cools, dehumidifies, filters and circulates air. 3-way directional grill for draft-free circulation. 1-dial control! Flush—extends only 5½ inches into room! Blond, all-metal cabinet!

• Casement Windows! ½ H.P. and ⅓ H.P. units need no window remodeling! No installation extras! Automatic drawer-pull control—no dials! Blond cabinet with mahogany drawer. Handsome brass pull!

• ¾ H.P. and 1 H.P. — Draft-free! Super-quiet! One dial control! Available in units that heat as well as cool! Special night "turn-down" for perfect sleeping — no chills! In both blond and mahogany decorator cabinets!



☐ Servel electric freezers

Both upright and chest type — with exclusive "Cold-Seal" construction for top operating economy — no cold seepage! Plus Electric Power Cold for extra protection! 9 to 22 cubic feet capacity!



☐ Servel electric wonderbar

Only Servel Dealers can offer this profitable, new unsaturated appliance to their customers! Makes ice cubes! Chills snacks, drinks! Holds a party-full! Perfect for offices, dens, bedroom, living room, patio!



☐ Servel automatic water heaters

Both Electric and Gas, backed by the biggest name on any water heater! New electric table-top model blends perfectly with kitchen cabinets—adds a handsome, practical working surface!

Servel

The name to watch for great advances in REFRIGERATION and AIR CONDITIONING

Servel Inc., Evansville 20, Indiana • In Canada: Servel (Canada) Ltd., 548 King St. W., Toronto, Ontario

MAIL THIS COUPON TODAY!

to: Servel, Inc., Dept. ACR 322, Evansville 20, Indiana
Have the Servel distributor nearest me rush full information on Servel's 1954 products and merchandising plans!

Name _____

Address _____

City _____

State _____



**FLO-COLD Stainless Steel
DRINKMASTER
ICE CUBER-COOLER**

Now Also Made in
ALUMINUM

"A Case of Cool Judgment"

United Friguator Engrs.

Menominee, Mich.

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)
thought of a comeback I needed last night.—Pure Oil News.

Wryly Senator Homer Ferguson signs letters to constituents:

"As we MUST say in Washington: Thanks a billion."

Add Women Stories

She was only:

A bartender's daughter, but she was a good mixer.

A carpenter's daughter, but she nailed her man.

An insurance salesman's daughter, but I liked her policy.

A surgeon's daughter, but oh, what a cut-up.

A professor's daughter, but she sure made the grade.

Verse of the Week

God, grant me not too much in life,
Never enough for boredom's snare,
Just let me always have enough—to share.

God, give me not too much reward,

For all I want while I may live
Is, really, just to have enough—to give.

Dear God, you need not give me,
Just find a little bit and lend,
That I can always quickly aid—a friend.

—JEANNE ROSER DURR

Out of Our Mailbag

Editor:

The audience in the television studio was applauding and cheering back there in New York when a neighbor walked into our living room and asked what was so funny.

"That guy on the TV just said he lived in Brooklyn."

Why do studio audiences always cheer and clap their hands when some one says he lives in Brooklyn or Cucamonga?—F. G. Coogan.

Answer: People are proud to hear any home town mentioned, we venture. Mr. Subscriber: Have you another theory?

R. W. Refrigeration Service
Trichinopoly, South India

Editor:

Reading your column "Inside Dope," after a hard day's work, makes one forget the worries and problems of the day.

Unfortunately for me, very many of your columns contain jokes about your national game Baseball—and as I do not know the A.B.C. of this game I cannot relish your jokes in full.

It will be very much appreciated if you or any of your readers could send me a book of rules of this game and a diagram of the field, etc., so that when you say that "Slugger Jones taps one to outfield and slaps down the third base" or something to that effect I'll be able to understand what exactly happens.

In one or two of your issues you also gave us a mathematical quiz, but of late you have stopped this. The reason why I do not know. These problems offer a diversion from the usual heat leakage, ventilation requirements, etc., which we guys in the refrigeration field are accustomed to doing. I am giving you below a few problems and if you think that they are suitable you may publish them.

Problem 1:

A man who had three sons went to market and purchased a certain number of oranges. At the market gate he met his eldest son and gave him half the number of oranges that he had in his basket plus half an orange extra. Further down the road, he met his second son and gave him half of what he had in his basket plus half an orange extra. When he came home he gave his youngest son half of what he had in his basket plus half an orange extra. He then found that he had no oranges left. He never peeled any oranges. How many did he buy?

Problem 2:

A farmer was once asked to

plant 19 trees in nine rows and each row to have five trees. How did he do it?

Problem 3:

A mother made a certain number of biscuits for tea for her three children, Tom Dick, and Harry. Tom came to tea first, divided the biscuits into three equal shares ate one share and went away. Dick came in next and not knowing that Tom had his share, divided the balance into three, ate one share and went away. Harry came in last divided the balance into three shares ate one share and went back. In the evening all three of them came home and finding some more biscuits left sat down and, sharing this into equal shares, finished the biscuits. How many did the mother make for them and how many did each of them have.

R. B. WYLDE

Free joke book to first 10 subscribers to send in correct answers.

Miami Beach, Fla.

Editor:

I missed seeing you and Phil at the convention because the doctor ordered me to come here. Now that I feel so much better, I am opening up here a branch of my place up north (Tigar Refrigeration Co., Inc. of Chelsea, Mass.).

I am having my News come here of course, and I would appreciate my 1954 Directory with your autograph that I always get from you.

If you know of any lines that I can represent please advise.

I have arranged a lease on a warehouse with 5,000 sq. ft. of floor area in the heart of Miami.

M. GEORGE TIGAR

Seasonal Upsurge In Air Conditioning, Month Ahead of Schedule

DAYTON—"The seasonal upsurge in the air conditioning market is running 30 days ahead of previous experience," J. F. Knoff, Chrysler Airtemp's vice president in charge of sales, told 125 company field sales personnel recently.

At meetings in New York City, Atlanta, and Chicago, Knoff revealed that Chrysler Airtemp's February orders increased 55% over January orders, and that the February, 1954 orders were 20% ahead of the February, 1953 pace.

"It's unusual for the season to start this early," Knoff observed. "Also, it's an indication that retail activity is at a faster pace than it was a year ago."

Field men reported that distributor and dealer inventories are at normal levels.

Hughes Is Worthington Distributor Supervisor

HARRISON, N. J.—Robert Hughes has been appointed air conditioning and refrigeration distributor supervisor, Matthew M. Lawler, Worthington Corp. vice president in charge of air conditioning and refrigeration, announced recently.

Hughes will be located at Worthington's Holyoke (Mass.) Works

and will report to W. F. Bishop, Worthington manager of distribution, Air Conditioning & Refrigeration Div.

Hughes joined Worthington in September, 1953. He has had over 23 years' experience in sales, sales promotion, and sales management; specializing in the distribution of air conditioning and refrigeration products for the last several years.

Universal Names Clayton V.P. and Gen. Sales Mgr.

LIMA, Ohio—Resignation of Harry J. Holbrook, vice president-marketing, Universal Div., and the appointment of William B. Clayton, Jr. as vice president and general sales manager has been announced by Morton L. Clark, president of Universal Major elec Appliances, Inc. here.

Holbrook has become vice president-marketing for Broil-Quik Co., New York City.

Clayton, who has been with the company since 1949, has previously served as vice president in charge of the Artkraft Sign Div., was in charge of all defense sales, and, more recently, has headed these divisions—signs, defense, and bottle cooler.

Prior to joining the company in 1949, Clayton was with Republic Steel Co. in the Chicago district sales division following his discharge from the service where he served as lieutenant in the Procurement Section of the Bureau of Ordnance, U. S. Navy. Before entering the service he was with Youngstown Sheet & Tube in the Washington, D. C. sales office.

Shreveport A. C. Firm Formed

SHREVEPORT, La.—Formation of the Shreveport Air Conditioning and Heating Co., located at 4612 Lyba St., was announced recently by owners Harold G. Martinez and Fred Eubanks.

How do you sell refrigeration

to the prospect who says . . .

"I JUST CAN'T AFFORD IT"

Here's how!



1. Understand his problem. He pays his supply bills daily . . . there just isn't enough money at the end of the month to make lump-sum payments.



2. Explain to him about the pay-as-you-go Meter-Matic sales plan. He'll see that this way he can afford the refrigeration he needs.



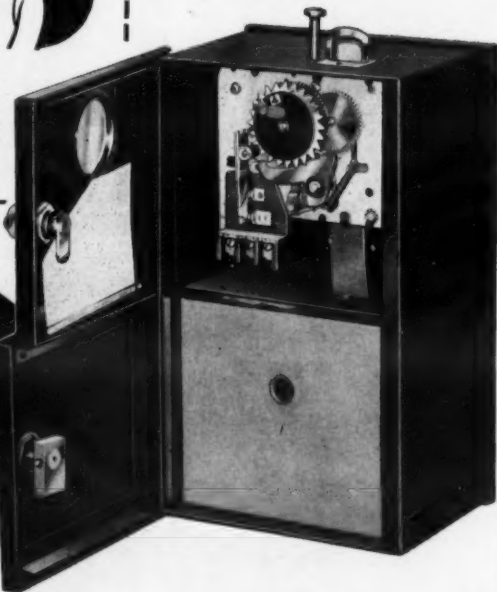
3. Installation is simple . . . in just a few minutes you hook up the meter between switch box and refrigerator. If money isn't deposited daily, current to refrigeration is cut off.



4. You have a happy customer—because he pays for his refrigeration the "painless" way—with small-change daily. You've made a sale that would be impossible to make any other way.

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The funniest and most stimulating book ever written on refrigeration and air conditioning merchandising. Every tested selling idea is illustrated with an hilarious story. Use the ideas and the stories in YOUR business.

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The Deepfreeze® Refrigerator

WITH DRINK-POURING AQUA-TAP AND EXCLUSIVE DISPENSADOR



The Anniversary model **Deepfreeze Refrigerator** is the answer to a demonstrator's dream! It's distinctive and definitely different. It compels America to stop, look—and BUY!

Right out on front of the cabinet is the **Aqua-Tap**—exclusive Deepfreeze feature that provides cold running water with fingertip ease! Show wonderful new Deepfreeze convenience by pouring glasses of cold water for prospects. Here is a simple, spectacular demonstration. You'll practically close sales **before you open the door**.

For real sales clinchers, show prospects the handy **Deepfreeze Dispensador**... the genuine Deepfreeze freezer compartment... roll-out shelf... swing-out, removable meat container... Electromatic or push-button defrosting... and beautiful **Emerasheen** color styling. These and many other Deepfreeze advantages dispel any doubt as to which refrigerator they should buy.

To earn bigger profits—display, **demonstrate** new Deepfreeze Refrigerators! Mail coupon today for full details.

YOU GET BIG DEEPFREEZE PROMOTIONAL BACKING LIKE THIS:

- ★ The Nation's Greatest Appliance Billboard Campaign—with local billboards coast-to-coast in key cities and on major highways!
- ★ Deepfreeze \$100,000 Home Appliance Contest—bringing you qualified local Deepfreeze prospects!
- ★ Gabriel Heatter Program—selling Deepfreeze appliances to more than 9,000,000 listeners every week! And—tie-in radio spots for your store!
- ★ Full Color, Full Page National Magazine Ads, local newspaper ads and display materials!



Exclusive with Deepfreeze— THE DISPENSADOR

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- Water Compartment stores 1 gal. for Aqua-Tap use.
- Egg Shelf keeps eggs handy, protects against breakage! Permits instant inventory.
- Salad and Cheese Keeper holds small greens, fruits and vegetables—prevents cheese from drying!
- Bottle Shelf holds quart beverage and milk bottles—round or square.

THE DEMAND IS FOR DEEPFREEZE IN '54!

—Sell Anniversary Model Genuine Deepfreeze Home Freezers, Refrigerators, Air Conditioners, Electric Ranges and Water Heaters.

SELL THE TRADE NAME **Deepfreeze®**
—THE SMARTEST DEALERS DO!

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Mail me, at once, all the facts about the new Anniversary model Deepfreeze Refrigerators, including information on the other quality Deepfreeze Home Appliances.

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Send for Profit Story NOW!

How To Use Storage Units

Ice Accumulator Systems Offer Large Tonnages of Refrigeration For Short Periods for Product Cooling, Industrial Processing

By J. E. Hutchinson, Manager, Dole Refrigerating Products, Ltd.,
Brantford, Ont., Can.*

If any of us were asked to define a storage battery of the electric type I'm pretty sure we would describe it as a piece of equipment designed to use its accumulated energy to do a heavy job of work in a short space of time at intervals, the intervening time being used to recharge or replenish its energy against the next demand period.

The subject of my discussion is a piece of equipment which performs in a very similar manner, except that its energy, in place of being electrical, is refrigerating capacity. I refer to what is variously known as an "ice builder," "ice accumulator," "latent heat storage unit," or as we term it, the "Ice-Cel," by reason of its refrigeration storage ability.

Variety of Application

This, as I am sure we are all aware, is no radically new idea, since ice has been around for quite some time, but it is a principle which is not being made use of nearly as much as it should in view of its simplicity, flexibility, and downright dependability. A description of some of the applications and advantages of this piece of equipment, I am sure, will bring to the mind of each of you one or more of your own customers who could put this simple but very effective type of equipment to good use.

First let us take a look at a piece of the actual equipment.

*Presented at the 15th annual convention, Refrigeration Service Engineers Society, Toronto, Ont., Can.

Various types and designs are available, but in Fig. 1 we have a series of vacuum plates, connected in parallel and immersed in a tank of water. The plates being refrigerated in the usual manner, ice forms on both sides of the plates.

Ice Builds to 2 1/2 In. per Plate

The plates are spaced on 6 1/2-in. centers, giving a clear space of 5 3/4 in. between. The ice is allowed to build up to a thickness of 2 1/4 to 2 1/2 in. on each plate, allowing a passage between of about 1 in. for water circulation.

With this thickness of ice on either side, it is interesting to note that one plate 9 ft. long by 3 ft. high has a capacity of 7 1/2 ton-hours of refrigeration available.

By ton-hours, of course, we mean the usual 12,000 B.t.u. through one hour of time. The term is used to indicate accumulated refrigeration capacity.

As I have already mentioned, the plates are connected in parallel and the refrigerant is fed to them by means of a thermostatic expansion valve through a pressure-type refrigerant distributor. The size, or capacity, of the expansion valve should balance with the compressor capacity at 20° suction temperature. The valve must be of the externally equalized type and an equalizer connection is provided on the suction manifold of the Ice-Cel bank.

Equalizer Can Be Moved

This location is for convenience only however, and if it is possible to provide an equalizer connection in the suction line beyond the location of the valve bulb, in accordance with valve manufacturers' recommendations, this is preferable.

The refrigerant distributor is provided on the bank ready to have the valve connected to it. In the case of ammonia banks, 1/4 in. steel tubes are provided instead, ready for welding into a multi-outlet ammonia expansion valve.

The distributor tubes feed the plates alternately at the top and bottom. The reason for this arrangement is that the ice tends to form heavier where expansion first takes place, and this alternate feed allows a greater average thickness of ice without bridging and thereby disturbing the water circulation pattern. This is shown in the lower left-hand corner of Fig. 1.

The bank is equipped with a suction manifold from which the suction line is led back to the compressor. The expansion valve bulb is attached to the suction line in the usual manner.

Heat Exchanger Recommended

We recommend the use of a heat exchanger and feel the use of an oil separator on the condensing unit is advisable.

Regarding controls, I might say that under certain circumstances, the ordinary pressurestat gives good results. The setting will vary naturally depending on the relationship of the size of the compressor to the Ice-Cel, but a starting point might be 19 p.s.i. cut-out and 31 p.s.i. cut-in on "F-12."

A large number of users have found a thermostat, with the bulb located just where the warm return water strikes it upon entering the tank, gives good results. This setup has the advantage of starting the compressor almost as soon as the cooling begins, which certainly is of benefit.

There is also available an elec-

tronic ice thickness control, which operates on the principle of different conductivities of ice and water. As long as there is water between the two contact points on this control the compressor operates but when this turns to ice the compressor is shut down. This control, although on the expensive side, does do a good job.

The warm water coming from the coil is pumped into the Ice-Cel at this point, through the water manifold and water distributor tubes. The ends of the distributor tubes are formed into nozzles and are located halfway down and midway between the plates. The water is ejected with considerable force from these nozzles and in passing over the surface of the ice, follows somewhat the pattern shown by the arrows. This results in the water traveling over the ice a distance of about three times the length of the plate assuring complete chilling of the water and also even melting of the ice.

It will be obvious that the plates form their own channels, thus eliminating a tendency with some

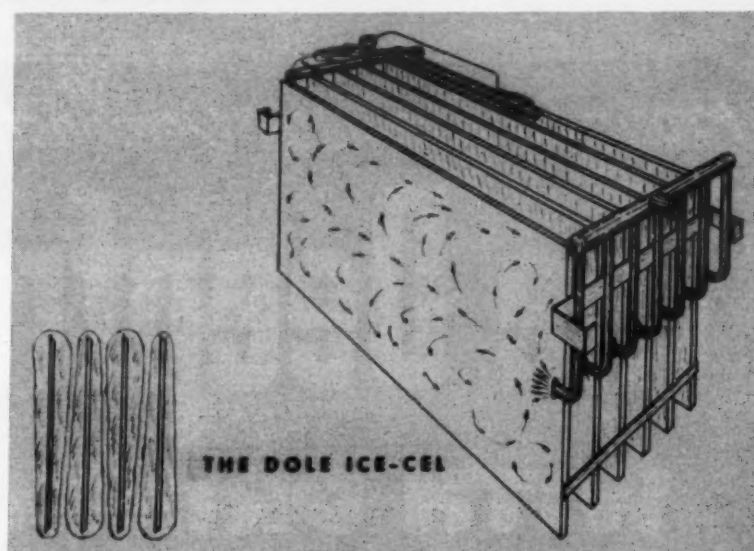


FIG. 1 shows a typical bank of Dole Ice-Cels. Cross-section at lower left illustrates how ice builds up on plates.

types of systems for the ice to melt off unevenly without an elaborate baffling system and in some cases a mechanical agitator of some sort.

This velocity is accomplished in the Ice-Cel system by the proper sizing of the circulating pump, and is particularly important where low temperature water, such as used in milk cooling, is required. The three sizes of Ice-Cels we manufacture require 40, 75, and 125 U. S. g.p.m., respectively.

If it should happen that the cooling coil does not require or

cannot handle these quantities, the excess is by-passed back to the tank, through the return line, where it mixes with the warm return water. This reduces the temperature of the return water and thereby does some of the cooling the ice would otherwise be called on to do.

As I have mentioned, the above applies where low temperature water, say from 33° to 37°, is required. For higher temperatures, a pump having the capacity of the cooling coil is usually adequate.

(Continued on next page)

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ICE TIP MACHINE
EVER BUILT....**

"ICE BOY"

**1000 to 1700 "King Size" ICE TIPS per day
means 1000 to 1700 drinks per day**

**Positive, Mechanical Control for
size of ice tips**

Motletone Avalon Grey Finish

Fits under bar or counter top—Easy access to ice

Commercial Refrigeration

Ice Accumulator Systems--

(Continued from preceding page)
This will be discussed again when we go into application methods.

While this unit is made in three standard sizes, it is sufficiently flexible that any number of plates may be built into a bank depending on the capacity required. It is available either in an insulated tank or as a bank only, for installation in an existing tank.

I think it might be advisable just for a minute to go into the

capacities of the various models at different water temperatures. This point will crop up later in our discussion and will be clearer if we go into it now. The lower temperatures, as for example 33° to 37°, are used mainly in product cooling.

The capacities of the three models are respectively, at these water temperatures, 13, 21, and 32 tons. You will note in Table 1 that the capacities in 38° to 42° range

are almost 25% greater and in the 43° to 45° range, higher yet. The reason for this difference is that by the time the water gets up to 37° the ice is about 75% melted, is about 90% melted at 40°, and completely so at 45°.

The latter two categories are used mainly for air conditioning application and the temperature to be used in calculations is determined by the ratio of latent to total heat, or in other words, how much moisture must be removed from the air. If the L/T heat ratio does not exceed 35%, the 45° range is satisfactory. Between 35% and 50%, the 40° range is recommended and above 50% we should go down into the same range as for product cooling.

Product Cooling, Industrial Processing Are Major Fields

The first of the two main types of applications, that of product cooling, covers the dairy and bakery field, candy plants, industrial processing such as the cooling of plating and anodizing tanks, photographic laboratories, etc.

One of the most important fields in product cooling is the dairy industry. Large tonnages of refrigeration are necessary for short periods, processing schedules are rigid owing to the perishable nature of the product, and it is often difficult to tie the two together economically.

Brine has been used to a great extent in the past as a cooling

medium but is rapidly falling into the discard for several reasons: the difficulty in controlling temperatures; the damage done should the system spring a leak; the large amount of floor space required, and so on.

Direct expansion, while very efficient, requires compressor capacity equal to the peak hourly load, which may only occur two or three hours a day, leaving either idle compressor time or a most uneconomical unbalanced condition the rest of the day. Power costs, either on a connected load basis or peak demand, are high, as well as investment, installation, and maintenance.

Problems Answered

The answer to all these problems is the Refrigeration Storage Battery! Sweet water coming from the Ice-Cel cannot be lower than 33°, so it is impossible to freeze the milk being cooled, thus eliminating the danger of "blue milk." There is no danger of corrosion in the event of a leak. The space occupied is about one-seventh of that required for a brine tank of the same capacity, a very important point in a dairy, where floor space is invariably at a premium.

If the customer has compressor equipment which is at reduced capacity or idle during the night or certain times of day, the Ice-Cel may be connected to it and through a timeclock arrangement utilize this otherwise wasted capacity.

If a compressor is installed to operate the Ice-Cel, it may be sized to operate 16, 18, or up to 24 hours a day if necessary. The possibility of using a compressor one-half, one-third, or even one-tenth the size of direct expansion requirements will be obvious. It will also be quite evident that in many cases an air-cooled or combination air and water-cooled unit may be used.

If cooling towers or evaporative condensers are used they of course will also be reduced in size accordingly. Chilled sweet water in the dairy can be used in the milk

cooler, either aerator or plate type, in holding vats either of the coil or jacketed type and can even be used as the cooling medium in a small sanitary type surface cooler for butter wash water. Since this is one of the more common types of application, I would like to work out an example with you to see how Ice-Cels are figured on a job of this kind.

(To Be Continued)

Weather Trends Offers Predictions for Business

NEW YORK CITY—A new corporation, Weather Trends, Inc., has been established to provide long range weather services for business and agriculture.

The company has opened offices in New York at 550 Fifth Ave. with Barry Schilit as vice president in charge of operations.

Schilit, a former Air Force meteorologist, was previously associated with Dr. Irving P. Krick, meteorological consultant, as director of weather service sales.

"The new service," said Schilit, "will provide long range forecasts for companies in industrial, agricultural, and soft goods fields where weather information is necessary to planning."

In addition to the regular long range forecast with detailed information for a specific city or location, Weather Trends, Inc. will provide a general long range service covering the entire nation. This generalized service has been designed for manufacturers and distributors whose weather-sensitive products are sold over wide areas.

Electric, Water Rates In 27 States Listed

WICHITA, Kans.—A booklet listing the electric and water rates of various municipalities in 27 states has been published by the Coleman Co. here.

Phase and voltage information on various cities is also included.

Table 1—Dole Ice-Cel Specifications

Outside Dimensions	LHS 12	LHS 21	LHS 31
Length	80"	128"	128"
Width	36"	36"	50"
Height	48 1/2"	48 1/2"	48 1/2"
Capacities—33° to 37°			
Ton-hours	13	21	32
B.t.u.	152,000	259,000	388,000
38° to 42°			
Ton-hours	16	27	41
B.t.u.	195,000	330,000	499,000
43° to 45°			
Ton-hours	18	31	46
B.t.u.	217,000	370,000	555,000
Minimum water circulation for 33°-37° Water	40 U.S. g.p.m.	75 U.S. g.p.m.	125 U.S. g.p.m.

Lipman
BELOIT, WISCONSIN

The Machine that gives you "KING SIZE" ICE TIPS!

It's amazing... this is it! The ice cube that is the answer to all ice cubes... the new "Ice Boy" Model LC 40 by Lipman.

Whatever features you have wanted in an ice cube... you'll find all the best answers in this newest of all Lipman engineered "Ice Boy."

It delivers "King Size" ice tips in a big size that permits one tip per drink... and one tip will make a really cold drink because tips from the "Ice Boy" are big, round crystal clear ice! And larger ice tips mean more drinks cooled per day... less mix to fill the glass... more profit for you!

The "Ice Boy" Model LC 40 is the first to afford positive control for size of ice tip... any size tip to diameter 1 1/4" (standard length of tip 2 3/4"). Has automatic shut-off when storage is at capacity... saves on operational costs. Stores ice tips for more than 700 drinks with "King Size" tips... more for smaller tips.

Handy size cabinet, 38" x 35" x 26 1/2" fits snugly under bar or counter top... and new design sliding surface door permits fast, easy access to storage bin.

For service, simply remove one control panel door on front of cabinet... complete controls and unit are readily accessible.

Write for complete information and descriptive, color-illustrated literature. You've seen all the rest... now get the facts on the best... Lipman ICE BOY Model LC 40.

YOU CAN MAKE MONEY SELLING LIPMAN "ICE BOY" because:

- ★ LOW ORIGINAL COST
- ★ LOW INSTALLATION COST
- ★ MINIMUM SERVICE
- ★ A NAME THAT'S KNOWN
- ★ DESIGNED FOR MINIMUM SPACE
- ★ OPERATES FOR ECONOMY
- ★ TERRITORIES AVAILABLE

Write for Details

Lipman Refrigeration, Division of
Yates-American, Beloit, Wis. U.S.A.

Gentlemen:
Please send complete information on the new Lipman "Ice Boy". We are interested in the "King Size" profit story!

Company Name _____
Address _____
City _____ State _____
Individual _____ Title _____



Yates-American
BELOIT, WISCONSIN

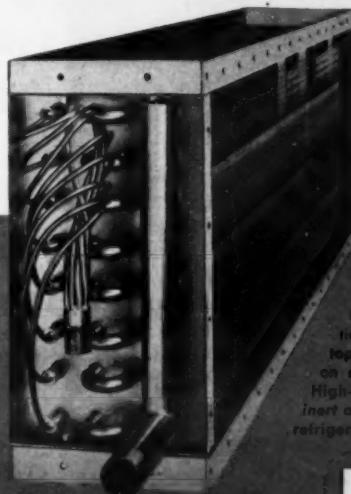
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Throw out the fans!
I want...

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Standard 4-Row Air-Conditioning Coils, AC4 Series



5 capacities in 11 popular sizes with F-12, F-22 refrigerants.

for stores, homes, and offices... where built-up systems are used with duct distribution.

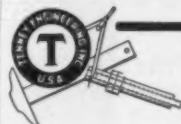
1. 3/8" O.D. copper tubing. 2. "Face-Size" Fins" of faceted-surface aluminum for greater heat transfer and dehumidification efficiency. 3. Heavy-gauge steel end, top, and bottom plates (aluminum available on request). 4. All copper section headers. 5. High-temperature hard solder tube joints with inert atmosphere inside tubes for clean scale-free refrigerant passages.

Model No.	Face Area	Finned Lgth.	Finned Hgt.	Dimensions A B C	Face Area	Recomm. CFM
AC4-2A	2	24"	7 1/2"	3 1/2" 1 1/2" 2"	1.51	250
AC4-2B	2	30"	11 1/4"	3 1/2" 1 1/2" 1 1/2"	1.56	250
AC4-3A	3	30"	11 1/4"	3 1/2" 1 1/2" 2"	2.27	1125
AC4-3B	3	22"	15"	3 1/2" 1" 1 1/2"	2.29	1125
AC4-5A	5	36"	15"	4" 1" 1 1/2"	3.75	1875

Complete range of models and sizes

AC4-7 1/2 A	7 1/2	43"	18 3/4"	4 1/2" 1 1/2" 1"	5.60	2800
AC4-7 1/2 C	7 1/2	36"	22 1/4"	4 1/2" 1 1/2" 1 1/2"	5.63	2800
AC4-10A	10	58"	18 3/4"	4 1/2" 1 1/2" 1 1/2"	7.56	3750
AC4-10B	10	48"	22 1/4"	4 1/2" 1 1/2" 1 1/2"	7.50	3750

It's NEW!—the ideal line of standardized direct-expansion coils. It's the one line that can be recommended, sold and installed with complete confidence, backed up by the sound engineering and quality construction that guarantee the best—when you specify TENNEY!



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ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, N. J.

Plants: Union, N. J. and Baltimore, Md.

Engineers and Manufacturers of Refrigeration and Environmental Equipment

No matter what your refrigeration problem... there's a Tenney unit to solve it. Tell us yours and we'll show you how. Tenney Engineering, Inc., Dept. E.

5220

Commercial Refrigeration

Bureau of Standards Engineers Develop Method of Determining Water Content In Circulating Fluorocarbon Refrigerant

WASHINGTON, D. C.—What is said to be a simple, rapid method for determining the water content of a circulating refrigerant of the fluorocarbon group has been developed by A. W. Diniak, E. E. Hughes, and M. Fujii of the National Bureau of Standards.

Based on the change in electrical resistance of an electrolytic film as it absorbs water vapor, the method is an application of the electrical conductivity method for determining water vapor in gases, developed and used for many years by E. R. Weaver of NBS.

The method is highly sensitive, gives accurate results, and does not require the removal of a sample from the circulation cycle, it is claimed. Determinations can be made repeatedly without difficulty, making it possible not only to determine the water content of the refrigerant but also to follow and

determine continuously its instantaneous water content before and after passage through a drier, NBS explained.

In commercial refrigeration systems the presence of water in the refrigerant constitutes a serious problem because freezing of the expansion valve and corrosion are always possibilities.

Until now, the bureau says, there has been no completely satisfactory procedure for determining the moisture content of a circulating refrigerant. Although several good methods for determining the moisture content of refrigerants in static containers are available, none of these is readily adaptable to a circulating refrigerant, chiefly because they require the removal of large samples, which would upset the steady state of the cycle. Such methods are also time-consuming and require much experi-

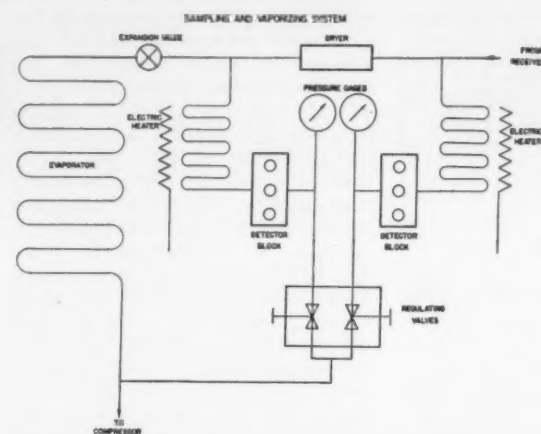


FIG. 1—Dual system used by the National Bureau of Standards to determine the moisture content of a circulating refrigerant before and after passage through the drier of a refrigerating system. The method is based on the change in electrical resistance of a hygroscopic film as it absorbs water vapor.

ence with the method involved.

In contrast, NBS says the new method is very quick, simple, and convenient. Once a sampling and a return point have been placed in the system, the measuring apparatus can be quickly connected and a determination made in 15 or 20 minutes.

The principle of the method has been used at NBS for some time, chiefly to measure small amounts of water vapor in gases. A thin film of hygroscopic material—usually a mixture of sulfuric and phosphoric acids—is spread over the surface of a solid insulator between metallic electrodes in a

pressure-tight enclosure.

The electrolyte tends to reach equilibrium with the water vapor in the surrounding gas and to form a solution whose electrical conductance is a measure of the concentration of water vapor in the gas. This conductance is indicated by a simple electronic circuit and a microammeter.

A gas of known moisture content is used to calibrate the film after each reading. By adjusting the pressure of the comparison gas until the same conductivity reading is obtained for both the known and unknown gas, the two gases can be made to have the same water concentration. The unknown water content can then be calculated from the two pressures and the known water content of the comparison gas at atmospheric pressure.

Usually the comparison gas has been saturated at a high pressure (about 1,000 p.s.i.) and room temperature in a specially designed saturator and then permitted to expand for use. For very dry systems a secondary comparison gas is employed. This is simply a quantity of fairly dry air whose moisture content has been previously determined by comparison with the saturated air.

GOOD ONLY FOR GASES

Because of the pressure relationships involved and because a liquid would wash away part of the hygroscopic film, the electrical conductivity method can only be used to make moisture determinations of samples in the gaseous state. Thus, in the equipment constructed at NBS, a very small amount of the circulating refrigerant is "detoured" from the system, vaporized by heating, passed through the pressure chamber containing the hygroscopic film, and returned to the suction line for recirculation.

To prevent fractionation which would take place if only a part of the liquid sample were vaporized, it is necessary to withdraw the sample through a capillary tube

so that the entire sample may be continuously vaporized. The capillary tube, dipping into the main stream of liquid refrigerant, carries a portion of the liquid to an electrical resistance heater which vaporizes the refrigerant.

To ensure complete vaporization, the tubing containing the liquid refrigerant is wound loosely around the heater in the form of a helix and is thermally insulated from the ambient air.

The vaporized refrigerant is then led to the detector block—a specially built, pressure-tight enclosure containing the moisture detecting element. By manipulating three control valves in the detector block, either refrigerant vapor or the comparison gas can be caused to flow past the hygroscopic film. However, the detector block is so constructed that the flow of refrigerant vapor through it is never interrupted; it is merely cut off from the detecting film.

HEATER PREVENTS CONDENSATION

Condensation of the refrigerant in the detector block is prevented by placing the heater near enough to keep the refrigerant heated to just above its saturation temperature at the pressure of the liquid line.

After leaving the detector block, the refrigerant vapor passes through a regulating valve which controls and limits flow through the sampling circuit; it then returns to the main line of the refrigerating system for recirculation.

To establish the validity of the electrical method for moisture determinations in a refrigerant, NBS compared results obtained by this method with the results of gravimetric determinations by the phosphorus pentoxide absorption method. Both types of determinations were made on the same or similar samples of refrigerant at the same, or very nearly the same, time. No important discrepancy was found between the results obtained by the two methods.

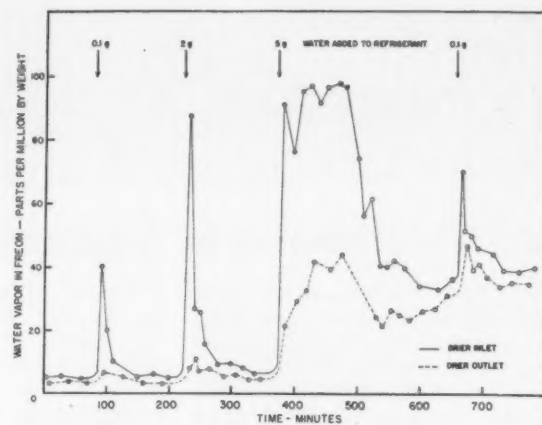


FIG. 2—Drying curves for typical system studied by means of electrical conductivity method for moisture determination. Rapid response of the method is evident in sharpness of peaks in curve representing moisture content on inlet side of drier (solid line). Irregularities in descending slopes of curves are due chiefly to local moisture variations throughout the circulating refrigerant. They become quite pronounced after a large amount of water is added.

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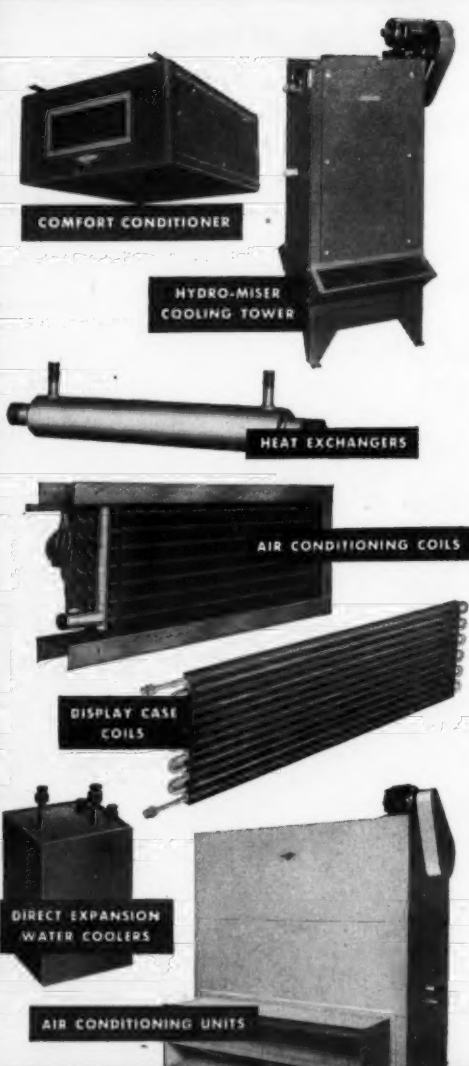
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LIFETIME PRECISION!

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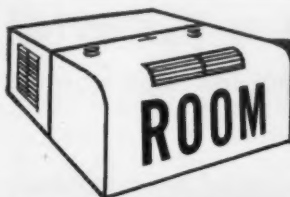
Give accurate control for a long period because of their simple, rugged construction. The temperature of the surrounding air does not affect the setting. Available in different ranges between -50 F and 500 F with remote bulb and capillary, with immersion bulb, or in a room thermostat. Pilot duty rating is standard but ratings up to 1½ hp at 220 volts are also available.

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MOTOR CONTROL





AIR CONDITIONERS



Just for Room Coolers

WINDOW DESIGNED FOR USE WITH ROOM AIR CONDITIONERS is this special "Rusco" model developed by The F. C. Russell Co., and being demonstrated here by Reo De Boer at the ARI Educational Conference at Long Beach, Calif. In the installation, the existing window, whether it be double-hung or casement, is entirely removed and replaced by the proper size Rusco window unit. All glass flanker panels, including flankers, are removable from inside for washing, eliminating window washing problems. An extra glass panel replaces the air conditioner unit and flanker panels when unit is removed for storage or servicing. Construction of frame is tubular galvanized steel with baked-on enamel finish. The windows are available to dealers through Russell company agents, it is stated.

Defense Cutbacks Hit Serval Quarterly Net; Civilian Sales Up 15%

NEW YORK CITY—While sales of Serval, Inc. were down for the first quarter of the fiscal year ended Jan. 31, W. Paul Jones, president, told stockholders that the company was operating profitably before the quarter ended.

In his quarterly report he said: "Your management has concentrated for the past nine months on reduction of overhead expense and cutting of production costs. This activity has been successful in increasing measure, and the company now seems about to reap the benefits of its broader base of new civilian products."

Sales for the first quarter were \$29,337,795, compared with \$39,325,866 in the corresponding quarter a year earlier. There was a deficit of \$124,439 after provision for taxes. This compares with net earnings of \$196,932, or 8 cents a common share, in the first quarter of the previous year.

The drop in sales, the report shows, was wholly in defense business, which fell off to \$19,882,452 from \$31,130,824. This decline in defense sales more than offset a 15% increase in civilian sales, which rose to \$9,455,343 from \$8,195,042.

Favorable trends for the rest of the fiscal year, which ends Oct. 31, were listed as better gross profit margins, reduction of excessive costs, and halving civilian sales expense in proportion to sales.

SURPLUS FOR SALE

BARGAINS IN REFRIGERATION VALVES, CONTROLS, FITTINGS, UNITS, ETC. OPEN TO OFFERS. SEND INQUIRY TO:

BOX 4532, AIR CONDITIONING & REFRIGERATION NEWS

Southernair Distributes Fedders Line In Florida

JACKSONVILLE, Fla. — Appointment of Southernair Distributors as wholesale distributor for north Florida for the Fedders-Quigan Corp. line of room air conditioners, was announced recently by A. E. Stein, president of Southernair.

Other officers of the firm are: W. E. Ware, sales manager; A. F. Parker, credit manager; and S. H. Coward, director of advertising and dealer display.

Keep Cool When After a Loan

NEW ORLEANS—Quarters of the American-General Savings & Loan Association on the ground floor at 338 Carondelet St. here, will be completely air conditioned, it was announced by President M. P. Arnoult, Jr.

New York Dealers Will Set Up Advertising Code

NEW YORK CITY—The Metropolitan Electrical Appliance Dealers Association here has formed a committee to draw up a code of advertising ethics as a basis for policing the advertising of members and other dealers.

Moe Sleicher of Sleicher's in White Plains, N. Y., who called the association's attention to the need for such a code, was named chairman of the code committee. Working with him are Irving Quastel of Sylvan Radio, The Bronx; Zeilg Brisk of Benco, Manhattan; and Sidney Slifstein of Capitol Radio in Port Chester.

Sleicher pointed to the need for policing such evils as advertising appliances at two-thirds off and then being "out of stock" when the sale opens and picturing higher priced appliances when copy refers to low priced models.

Kurzon Named Distributor Of Deepfreeze Appliances

NORTH CHICAGO — Joseph Kurzon, Inc., New York City, has been appointed distributor for Deepfreeze Appliance Div., Motor Products Corp., it has been announced by L. R. Walker, the manufacturer's manager of field sales.

Kurzon's territory includes Bronx, Manhattan, Kings, Queens, Nassau, Suffolk, and Westchester counties.

The firm presented a Deepfreeze showing to dealers at an open house at 6 p.m. daily March 15-19.

In business since 1915, the distributor firm handles a variety of major name brand appliances.

Company executives include Joseph Kurzon, president; D. A. Pintaville, executive vice president; and F. P. Biren, sales manager.

FEDDERS FIRST TO COOL and HEAT automatically

IT'S THE NEWEST! FEDDERS "REVERSE CYCLE" HEAT PUMP!

Amazing Built-In Weather Brain "thinks" hot or cold AUTOMATICALLY—reverses "Cool" Cycle to pump HEAT whenever room temperature drops below desired level.



Now for the first time in the History of Room Air Conditioning...

Fedders offers a reverse cycle heat pump that gives you just as many BTU's of heat,* as it does BTU's of cooling and does it all automatically!

Exclusive in the 1954 Fedders ¾ ton and 1 ton deluxe window models, this amazing Fedders "Weather Brain" switches a four-way valve from "heat" to "cool" and from "cool" to "heat" automatically. Once the comfort range is set there are no buttons to push. No levers to pull! The customer merely sets an automatic thermostat to select whatever temperature he desires... then lets Fedders keep it constant!

FULL RATED UNITS DELIVER FULL CAPACITY OF HEATING OR COOLING! Traditionally Fedders delivers full measure of cooling capacity. In fact many hotel men and other multiple unit purchasers have found that by actual test the Fedders ½ ton out-performs certain competitive ¾ ton units... the Fedders ¾ gives more cooling than certain competitive 1 ton units!

BUILT-IN "PUSH BUTTON WEATHER BUREAU" IS FEDDERS EXCLUSIVE TOO! Again in 1954, all Fedders Room Air Conditioners feature the industry's most talked-about sales clincher... the Fedders Weather Bureau. With Fedders push-button magic, you have the weather you want at your fingertips. Just push a button for high or low cooling... another to exhaust stale air... another

to ventilate only. Built-in lamp automatically lights the Weather Bureau when you lift the top.

With the new year-round Fedders Weather Brain and with shortages again forecast throughout the industry, the season has already started with a bang. Don't wait. See your Fedders Distributor for full details now or write Bob Cassatt, Sales Manager, Fedders-Quigan Corp., Dept. AC-2, Buffalo 7, N. Y.

*Under certain temperature conditions.

FEDDERS
WORLD'S LARGEST MANUFACTURER
OF ROOM AIR CONDITIONERS

Residential Air Conditioning

Engineer Questions Slide Rule Data For Air-Cooled Residential Units

By P. W. Wyckoff, Assistant Chief Engineer,
Airtemp Div., Chrysler Corp.

We believe the slide rule recently issued by the Coleman Co. [see AIR CONDITIONING & REFRIGERATION NEWS, Feb. 22, 1954, page 17] is a very interesting attempt to relate the various factors involved in the selection of home air conditioning equipment for sales people in the field. Airtemp experience, however, indicates very greatly different results than are shown on this slide rule—particularly on the matter of operating cost.

DATA FROM EXPERIENCE

We have shipped nearly 3,000 air-cooled home air conditioners and have secured data from complete instrumentation of several installations based on a full season of operation. (For example, see AIR CONDITIONING & REFRIGERATION NEWS, Jan. 25, 1954, page 19, Figs. 4 and 5).

In the interest of stimulating discussion on this subject of great importance to the air conditioning industry, we present the following comments on the Coleman slide rule:

1. Load Determination Comparisons:

As Coleman points out, this guide is not intended to take the place of heat gain calculations. We believe this point should be emphasized and field personnel should be encouraged to use the methods developed by the Air-Conditioning & Refrigeration Institute (A.R.I.) in cooperation with the National Warm Air Heating and Air Conditioning Association.

Rough estimates are liable to give surprising results at times. For example, one 1,650-sq. ft. ranch-type house which we have calculated is of brick veneer construction. It has attic insulation but no side wall insulation, no weather stripping, no shade, and no storm windows. We would be inclined to describe this house as one with a "fair" insulation.

From the slide rule, using a 20° temperature differential and humidity for the area involved (Dayton), we would obtain a load of 4.12 tons. By the A.R.I. method, we obtain 2.9 tons. The accuracy of A.R.I. figures was confirmed by the actual field operation where a 3-ton unit proved easily adequate for a 20° differential on 95° days. If this house were called a house with "good" insulation, we would obtain 3.29 tons from the slide rule.

MUST USE JUDGMENT

It is obvious that a great deal of judgment is necessary in the use of such approximations. As a matter of fact, in the above example the salesman might well have lost the sale to a competitor because he would probably have figured on a 5-ton unit instead of a 3-ton.

2. Assumptions and Conditions Used to Find Operating Costs:

Comparison using Coleman's assumptions: In order to make an exact comparison of Coleman's results with ours, the same conditions as given in the Feb. 22, 1954 article are used. These are:

- | | |
|---|-------------------|
| (a) Capacity required | 3 tons |
| (b) Total cooling for season (used for all three types to give common comparison basis—1,440 x 3) | 4,320 ton hours |
| (c) Electrical cost | 2.5¢/kwh. |
| (d) Water cost | 30¢/1,000 gallons |

In addition, the following assumptions were made. These are not specifically stated in the article but some similar assumptions must have been made by Coleman.

- | | |
|---|-------------------------|
| (e) Water temperature for waste water condenser | In—75° F.
Out—95° F. |
| (f) Condensing temperature during cooling tower operation | 105° F. |
| (g) Cooling tower make-up water rate | 6½ gal./hr./ton |

- | | |
|--|--|
| (h) Maintenance costs for cooling tower or evaporative condenser per season. (In the experience of our organization, however, this commonly runs up to \$25 per season higher than an air-cooled unit) | 0 |
| (i) For air-cooled unit—condenser ambient temperature—average during operation for entire season | 85° F. |
| (j) Inside temperature conditions on evaporator | D.B. 80° F.
W.B. 67° F.
Rated air flow |

3. Operating Cost Comparison:

Using the conditions given, we then have the cost of operation comparison (in dollars per season) shown below. No figures are shown for the evaporative condenser since our actual field operating experience on residential units of this type is not sufficiently extensive.

Waste Water Condenser Cost		Airtemp	Coleman
Electrical	.....	\$125	\$118
Water	.....	111	116
Total	.....	236	234
Cooling Tower Cost			
Electrical	.....	\$165	\$163
Water	.....	8	8
Total	.....	173	171
Air-Cooled Condenser—85° Condenser Ambient			
Electrical	.....	\$166	\$222
Total	.....	166	222

It will be noted from the above that information on waste water units and units with cooling towers agree quite well. On the air-cooled units, however, Coleman figures are 34% higher than ours!

A clue to the difference may be obtained from the table in the Feb. 22 article. The table shows 2.1 Kwh./ton total electricity consumption for an air-cooled air conditioner. Our experience shows that such a high figure would not be reached even if the outside air temperature under which the air-cooled condenser operated never got below 110° F. day or night for the entire six-month season!

Actually, we find that for the Waco area the outside temperature averaged over the operating time of an air-cooled air conditioner for the entire season is about 85° F. The Kwh./ton figure for our air-cooled 3-ton unit under this condition is 1.53 including power for the circulating fan, condenser fan, and controls (the latter items adding up to .26 Kwh./ton instead of the .5 given in the published table).

4. Summary:

In the example under discussion, we figure a saving of \$70 in the season by using an air-cooled unit over a waste water unit and a saving of \$7 over a cooling tower system, without considering any costs for tower maintenance, seasonal water drainage, etc. This is typical of our field results.

Using the Coleman evaporative condenser figures and our air-cooled unit figures, we obtain a \$33 penalty during the season (not \$89!)—again allowing nothing for maintenance of the surfaces in contact with water spray.

It is our experience that considering normal maintenance, there are practically no areas in the country where it is not advisable

from an over-all cost standpoint alone to use air-cooled equipment.

Of course, other important considerations in selecting the best type of residential air conditioning for a given application are not considered in the above discussion. These include first cost (installed), immediate availability of air conditioning for hot spells in early spring or late fall (without adding or draining water), installation flexibility, quietness, and other factors.

Carrier Names Shaw Director Of Laboratory Facilities

SYRACUSE, N. Y.—Appointment of James H. Shaw to the position of director of laboratory facilities for Carrier Corp. was announced recently by Walter A. Grant, vice president, central engineering staff.

Shaw will assume direction of certain major test facilities, and will also serve engineers throughout the corporation as a consultant on laboratory facilities and instrumentation design.

Recently chief engineer of the refrigeration engineering section of Eastman Kodak in Rochester, Shaw has comprehensive experience in facilities planning, design, and operation.

A graduate of Clarkson College of Technology in 1933, Shaw is a member of ASRE and holds a professional engineer's license in New York state.

Distributor Prepares for Big Year In Home Cooling

ARDMORE, Pa.—A local air conditioner distributor is betting 5,000 sq. ft. of new warehousing space on a tremendous increase in residential-type installations this year.

Dorries Distributors, marketing Chrysler Airtemp heating and residential cooling equipment in south Jersey, metropolitan Philadelphia, and the Delaware-Maryland peninsula, is busy expanding its warehouse by 50%, company officials reported.

2,500 Air Conditioned Homes Planned In Houston

HOUSTON, Texas—Work began recently on the first of 2,500 air conditioned brick homes in the \$11,500 to \$14,500 class at Almeda Plaza subdivision here. The project is expected to cost in all \$35,000,000.

The developers now have 158 acres, about nine miles south of the downtown Houston area, on the fringe of the city, and are preparing to close a deal for 500 acres more.

Frank J. Gaskey & Son and the C. & C. Construction Corp. have purchased all the lots in the first section from the developers headed by Drs. Bernard Waidhofer and Chester Reed.

are you
ready for
year 'round
Air
Conditioning?

Cheaper Than You Thought?

Survey Finds Home Cooling Operating Costs Average \$13 per Month In Dallas

NEW YORK CITY—Home air conditioning is cheaper than you think. Operating costs which averaged \$13 a month for fully air conditioned homes are documented in an exclusive report in the March issue of *House & Home*.

The authentic figures were gathered by a special team of *House & Home* editors and technicians and show just how low the actual operating costs proved to be in the first low-cost builder homes planned for air conditioning.

In 1953, second hottest summer in the history of the Dallas weather bureau, a group of 35 families paid average electric bills of less than \$13 a month for cooling their 1,150-sq. ft. houses. For the whole five-month cooling season, these bills averaged \$64.09 per family.

These figures were checked by *House & Home* editors through the local electric company as well as with the house owners. Their water bills for cooling towers ran \$2 to \$3 for the entire summer.

Because these figures come from Dallas, they have special significance. Dallas is much hotter and much more humid than average

U. S. cities and last summer was a record breaker even for Dallas: the temperature hit 100° or higher on 34 different days. Operating costs for cooling in houses like these would be even lower in almost any other area.

UPSETS FHA STANDARD

The \$13 a month average is so low it should upset FHA-VA insistence that a family have as much as \$100 a month higher income to qualify for a \$12,500 house with air conditioning than to qualify for a \$12,500 house without it, the magazine editors declared.

It is this FHA-VA stand that has discouraged many builders from offering air conditioned houses to the public which wants them, they pointed out.

The 35 Dallas houses sold for \$12,500 in 1952. They are one story, three-bedroom homes with carport and have slab floors. Thirty-three houses have 2-ton General Electric central air conditioning units; the other two have 3-ton units.

The houses have 24-in. overhangs, 3-in. mineral wool insulation or the equivalent in aluminum foil in the roof and 2-in. insula-

tion in the walls. The builders and engineers felt that operating costs could have been even lower if all the big windows had been fully shaded. In general, houses with unshaded east or west windows had the highest operating costs.

Total bills for cooling electrically varied from a low of \$11.91 for a family that was away two months, to a \$111.57 high for a house with big windows facing east and west and a family that likes a temperature of 68° all summer. More important, 26 bills or 74%, ran from \$41 to \$80.

House & Home researchers declared that 2-ton air conditioning units are sufficient for 1,150-sq. ft. houses with considerable glass. The Dallas homeowners agree.

"We kept our house at 74° practically all the time," said one resident. "A neighbor across the street only manages 78° when it's really hot. We think one difference is that our cooling tower is on the south where it gets the prevailing breeze and hers is on the north."

Another resident reported, "We're delighted with the cooling. Some of the neighbors griped a bit when 105° weather forced inside temperatures a little over 80°.

But compared with the awful heat last summer, it was really cool in our houses."

The *House & Home* research team reported that total power bills and old houses give false impressions of costs. Operating costs for new houses are low not only in Dallas but also in other cities; lower than most people think, because of two common misconceptions.

1. Many people confuse air conditioning with total electric bills. They are likely to say their electric bill is \$25. Word soon spreads that air conditioning costs \$25 a month.

A family living in an air conditioned house at Wichita had one bill of \$25, but of that, \$6 was for other household electricity and only \$19 for air conditioning.

2. Many people believe that operating costs are as high in new houses as they are in old houses. Generally, the first houses to be air conditioned were old and large.

But a sprawling house, often uninsulated and with loosely fitting windows is quite different from a house designed and insulated specifically for air conditioning as were those in Dallas. Any house that requires a 10 or 15-ton cooling unit is obviously going to have high cooling bills.

WATER COST NOT LARGE

Water is a cost factor but not a large one. Only if water is cheap should it be thrown away. Otherwise a cooling tower, an evaporative or an air-cooled condenser should be used to save water, *House & Home* advises.

Here are some typical operating costs for new houses which the *House & Home* research team checked in other localities:

Nine dollars per month in Sterling, Ill.; \$11.13 in Dayton for a two-story house with 1,256 sq. ft., 3-ton unit, and a family that did a lot of entertaining; \$17.75 in Columbus for a 1,400-sq. ft. house operated for four months at a total cost of \$71; \$18.70 in Tampa, for a 1,100-sq. ft. house with 2-ton unit. The Tampa house has 52 lin. ft. of glass in its west wall which boosted operating cost.

In addition to the research report on air conditioning, *House & Home* reports in its March issue on NAHB's air conditioned research village, now building at Austin; heat pumps for all-year air conditioning; how air conditioning is selling new homes; how to shade windows for better cooling; and engineering reports on the latest ways to reduce air conditioning costs.

F. H. Ault Retires

HOLLAND, Mich.—F. H. Ault, sales manager of Holland Furnace Co. since 1935, has retired, it was announced recently. Dom Massaro was appointed to succeed him. Ault was associated with Holland Furnace for 28 years, having joined the company in 1925 as a salesman for the South Chicago branch.



L. C. GINN



J. F. WARREN

Coleman Picks Ad Head, Merchandising Manager

WICHITA, Kan.—Julian F. Warren, formerly merchandise manager of the Coleman Co., Inc. has been named director of advertising and sales promotion, it was announced recently by C. L. Burrows, sales vice president.

Warren succeeds Tom Gibbons who died Jan. 24 of injuries sustained in a highway accident.

Leland C. Ginn, who recently joined the company as assistant to the sales manager of the company's heating and air conditioning division, has been advanced to the position of merchandise manager.

Before joining the Coleman organization, Warren was sales manager of Delco Appliance Div. of General Motors Corp. and from 1944 to 1948 was advertising manager of Delco.

Ginn for six years was manager of the heating department of B. K. Sweeney Co., Denver. For the past five years he has been sales manager, heating and air conditioning department, Radio City Distributing Co., in Dallas. Both companies are distributors of Coleman products.

Quick, Johnston Promoted To New Mueller Posts

MILWAUKEE—Two promotions of plant management personnel were announced recently by H. P. Mueller, president of Mueller Climatrol of Milwaukee.

Carl Quick, former head of plant personnel, was appointed director of industrial relations and Bob Johnston was named production manager.

Quick, who started over 17 years ago as a shipping foreman, has worked in various departments of the firm including sales, service, and plant personnel and employment.

Johnston came to Mueller Climatrol over four years ago as a production engineer. His experience before joining Mueller included five years as an aircraft tool engineer and supervisor, two years as a chief inspector, and over two years as production manager.

NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

FREE

Here's the air conditioning control application manual you'll need. It's loaded with easy-to-read information on the operation of automatic controls . . . how they're wired . . . how to install them. It's packed with diagrams and illustrations. There's nothing like it anywhere . . . it's a working tool you'll appreciate and use every day.

This manual is now on the press and will be available soon absolutely FREE. Be sure to put in your reservation for a copy . . . write today, on your letterhead, to Penn Controls, Inc., Goshen, Indiana, and ask for your free copy of "Residential Air Conditioning Control."

Residential Air Conditioning Control

HOW

WHY

WHERE

YOUR biggest sales and profit opportunities are in year 'round, packaged air conditioning . . . residential heating and cooling! This is the NEW BOOM INDUSTRY.

But, automatic heating and cooling are NOT NEW TO PENN. For many years, Penn has been developing and building automatic controls for the leading manufacturers of heating and mechanical cooling equipment. There are other manufacturers of heating controls . . . and, still others who make refrigeration controls. Penn, however, builds BOTH heating and cooling controls.

That is the reason Penn is recognized as the ONE SOURCE for dependable, time-tested controls for year 'round air conditioning . . . the reason more and more manufacturers of packaged air conditioning equipment bring their control problems to Penn for solution!

You, too, can profit from Penn's experience and know-how. Be sure that the packaged air conditioning equipment you sell and install is fully equipped with Penn Controls. Standardize on Penn Controls and Satisfied Customers. Penn Controls, Inc., Goshen, Indiana. Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.

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Constant, uniform low temperatures are maintained on this specially designed dispensing table by the use of DOLE HOLDOVER PLATES. Cold food preparations, placed in direct contact with the flat, intensely cold plate surfaces, are kept fresh and palatable until served. DOLE HOLDOVER PLATES are available in lengths and widths to fit any standard or special dispensing cabinets, tables, or shelves.

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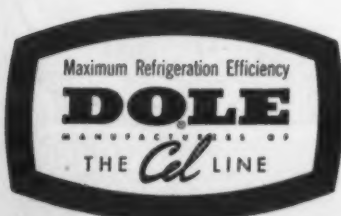
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44 Elgin Street, Brantford, Ontario



Pictures on this page are from the first in the new series of ARI Educational Conferences on Commercial Refrigeration and Air Conditioning, which was held in Long Beach, Calif., March 11-13.

Pictures taken at the Long Beach Conference are representative of the type of exhibits put up at these conferences, which are open to all in the industry who wish to further their knowledge of the industry's technical advances, and are not intended to depict all of the exhibits, or even a major portion of them.

Additional pictures will be published in a following issue.



USE OF DOUBLE-FLARING TOOL, BECOMING PARTICULARLY IMPORTANT (left) since SAE standards call for double flaring of connections in automotive air conditioning systems, is demonstrated by Jim Norris (standing, right) of Imperial Brass Mfg. Co. to B. B. Okimoto, Refrigeration Service & Supply Co., Honolulu. Men with headsets in foreground watch and listen to talking slide film on proper use of tube cutters, a new innovation in exhibit setups that complies with rules against loudspeaker type apparatus.

OPERATING DISPLAYS, SUCH AS THAT OF KINETIC CHEMICALS (FOREGROUND) AND ALCO VALVE CO. (BACKGROUND) (right) got a lot of attention at the first in the new series of ARI Educational Conferences, held March 11-13 in Long Beach. Kinetic exhibit revealed differences in operating characteristics of "Freon-12" and "Freon-22" refrigerants. Also demonstrated various types of refrigerant controls.



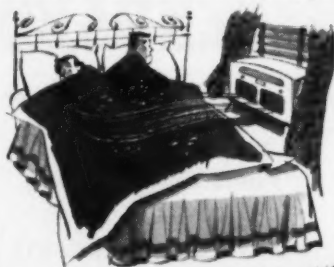
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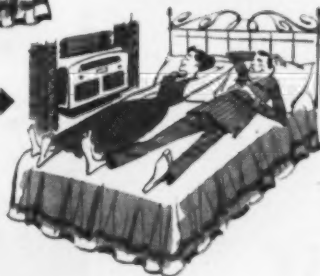


INDIVIDUAL CONFERENCES ON INDIVIDUAL PROBLEMS HAS PROVED ONE OF THE MOST BENEFICIAL ASPECTS of the conferences. Here in the Sporian Valve Co. exhibit Darrell R. Smith of Smith's Refrigeration, Pomona, Calif., confers with J. A. Hagan at the liquid level control demonstrator, while at right Kelvin Dawson of Olympia, Wash., checks over a problem with J. T. Barry and P. J. McCarthy against a colored panel display which reveals many of the causes for breakdowns in refrigeration systems.



when
old-fashioned
air conditioners
freeze 'em

you can always
please 'em
with Ranco
controls!



Ranco's new 3" differential control means *plus* business for you! It's just the control you need for modernizing old-fashioned window air conditioners not equipped with controls. In residential and commercial installations—bedrooms and offices—this new control prevents over-cooling . . . keeps the temperature just right all the time. In humid areas, it holds down humidity while maintaining a comfortable temperature. There are many out-moded conditioners right in your own city—cash in on this extra modernization business.

Whatever your refrigeration control problem—see your Ranco wholesaler. He has a Ranco control for more than 4,000 replacements . . . far more than any other manufacturer!



Service & Supplies



HOW TO USE SUPER-HEAT CHART (LEFT) is demonstrated by Bill Stafford of Detroit Controls Corp. to Harry Brown of Pasadena and Hector Navarette of Los Angeles. Demonstration setup also showed effect of pressure drop in the liquid line. Pocket size models of the super-heat chart are being made available by Detroit Controls Corp. Demonstrator panel at left is for various types of capacity control on automotive air conditioning systems, using a variety of control devices.

CONSOLE TYPE ROOM AIR CONDITIONER FOR HOOKUP TO circulating water system (right) in Dwyer-Hanson Co. exhibit is checked over by Leon Smith (right) of Haun Refrigeration, Long Beach, as Robert Hall of Dwyer-Hanson watches. Backdrop drawing illustrates fundamental hookup of a hot and cold water air conditioning system.



ONE OF THE ATTRACTIONS FOR VISITORS TO THE EDUCATIONAL CONFERENCES (left) is that they can see the "insides" of refrigeration components and accessories, such as in this Henry Valve Co. display of various refrigeration system valves, strainers, driers, and other accessories. S. E. Alexander (head turned) and C. V. Gary of Henry go over the display with A. J. MacJennett and Gerald Stodley of Wyatt Brown Co., San Francisco.



AUTOMATIC DEFROSTING COMMANDS MORE ATTENTION daily as use of low temperature systems grows, and this neat McQuay setup demonstrates the hot automatic gas defrosting system used with a McQuay unit cooler.

MERIAM

FLOW METERS...

accurately indicate flow of chilled water supply. Portable Meriam Model A-286 Flow Meter is most often specified.

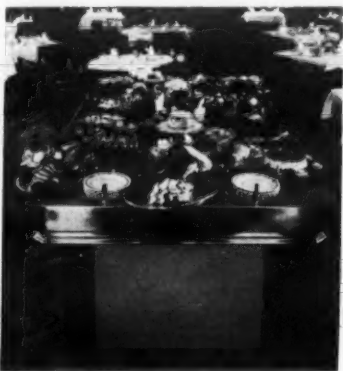
Shipped complete with valves, piping manifold, over-deflection chamber, 10' flexible hose with quick disconnect fittings and adaptor for pressure taps at orifice flange.

Write Department C-12

THE MERIAM INSTRUMENT CO.
10994 MADISON AVE. • CLEVELAND 2, OHIO

Where
the best in
refrigeration
is required

SPECIFY
DOLE
HOLDOVER
PLATES



INSTALLED AT THE FAMOUS
SVITHIOD
SINGING
CLUB
CHICAGO

Constant, uniform low temperatures are maintained on this specially designed dispensing table by the use of DOLE HOLDOVER PLATES. Cold food preparations, placed in direct contact with the flat, intensely cold plate surfaces, are kept fresh and palatable until served.

DOLE HOLDOVER PLATES are available in lengths and widths to fit any standard or special dispensing cabinets, tables, or shelves.

Write For Engineering Catalog AE

DOLE REFRIGERATING COMPANY



5920 NORTH PULASKI ROAD
CHICAGO 30, ILLINOIS

103 PARK AVE., NEW YORK 17

In Canada: Dole Refrigerating Products, Ltd.
44 Elgin Street, Brantford, Ontario



Pictures on this page are from the first in the new series of ARI Educational Conferences on Commercial Refrigeration and Air Conditioning, which was held in Long Beach, Calif., March 11-13.

Pictures taken at the Long Beach Conference are representative of the type of exhibits put up at these conferences, which are open to all in the industry who wish to further their knowledge of the industry's technical advances, and are not intended to depict all of the exhibits, or even a major portion of them.

Additional pictures will be published in a following issue.



USE OF DOUBLE-FLARING TOOL, BECOMING PARTICULARLY IMPORTANT (left) since SAE standards call for double flaring of connections in automotive air conditioning systems, is demonstrated by Jim Norris (standing, right) of Imperial Brass Mfg. Co. to B. B. Okimoto, Refrigeration Service & Supply Co., Honolulu. Men with headsets in foreground watch and listen to talking slide film on proper use of tube cutters, a new innovation in exhibit setups that complies with rules against loudspeaker type apparatus.

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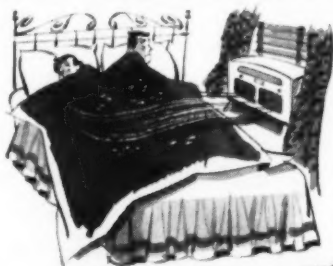
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when
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Whatever your refrigeration control problem—see your Ranco wholesaler. He has a Ranco control for more than 4,000 replacements . . . far more than any other manufacturer!

Ranco Inc.
COLUMBUS 1, OHIO
WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS



A13-109
(without "off"
position)



A13-110
(with "off"
position)



Service & Supplies



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Shipped complete with valves, piping manifold, over-deflection chamber, 10' flexible hose with quick disconnect fittings and adaptor for pressure taps at orifice flange.

Write Department C-12

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Portfolio Issued To Aid Quiet Kool Cooler Sales

NEWARK, N. J.—The Quiet Kool promotional campaign for its 1954 line of air conditioners includes a basic "Sales Promotional Portfolio," it was announced recently.

This portfolio consists of the following:

1. Catalog sheets for the "Compact" and "Custom" series of room air conditioners. These catalog sheets illustrate the unit and contain technical specifications.

2. A four-color consumer folder showing both series and their various applications.

3. A flier illustrating the availability of a full-color electric flashing display that is mounted on the air conditioner. The air conditioner itself rests on a wrought iron table.

Other sales aids include fliers illustrating the casement window application, advertising mats, selection charts, etc.

"The Quiet Kool selection chart has been scientifically designed by Quiet-Heat Mfg. Corp.'s engineering staff to aid in the accurate determination of the correct size air conditioner for various rooms under different heat loads," the company said.

"It was designed with simplicity and accuracy in mind, and the correct size unit can be determined in a few minutes by consulting the various tables included."

RCA Shipping Improved Electric Dehumidifier

CAMDEN, N. J.—A newly-designed, lightweight electric dehumidifier, featuring a compressor 33% more powerful than last year's, is now being shipped to RCA Victor distributors, it was announced by the RCA room air conditioner department.

The unit, which can remove up to 14 qts. of moisture from the air every 24 hours, gives adequate humidity control in rooms up to 12,000 cu. ft. The cabinet is in alpine gray and occupies slightly more than 2 sq. ft. of floor space. It weighs 64 lbs. and can easily be moved from room to room.

Airtemp Gets \$400,000 Order from Distributor

BOSTON—An order for over \$400,000 worth of room air conditioners was placed in January by National Appliance Distributors, Inc., with Airtemp Div. of Chrysler Corp.

Bulk of the huge order is Chrysler Airtemp's new casement window room air conditioner. This is an indication of the extent of the 1954 market in eastern Massachusetts, according to Bob Kadets, president.

The order was placed at the time the firm was named distributor.

Mitchell Room Air Conditioner Ad Budget Doubled to \$2,000,000 for '54 Line

CHICAGO—An advertising budget of approximately \$2,000,000, double its 1953 outlay, has been scheduled by Mitchell Mfg. Co. for its 1954 line of room air conditioners.

Heart of the campaign will be full-page and one-half page advertisements in *Life*, *Time*, *Newsweek*, *National Geographic*, and *Saturday Evening Post*.

Selection of media has been based on circulation and the fact that such a representative group of publications will reach every consumer level, according to Howard Haas, Mitchell director of advertising and sales promotion.

The ads, which will appear on the average of more than once a week March 1 through June 7, will have a total mass impact of more

than 200,000,000 reader impressions, said Haas.

Design and efficiency both are strongly emphasized in the black and white ads which picture Mitchell's room air conditioner which mounts flush with the wall.

"In addition," it was stated, "a unique approach to product features in the ad is a comparative study of the cooling capacity of room air conditioners recently completed by the United States Testing Co., Inc."

"A chart compares Mitchell's cooling power with five other competitive brands as determined by this independent laboratory test."

Bernard A. Mitchell, president, in commenting on the campaign, said: "The increase in our advertising budget for 1954 is one way

of evidencing our faith in the growth of room air conditioning sales during the coming season. This is based largely on the early success of our pre-season ad campaign."

The pre-season campaign was launched Nov. 2, "six months before the beginning of the traditional air conditioning selling season." It resulted in orders from dealers and distributors for 400,000 units, representing \$160,000,000 in sales at the retail level, twice the number sold last year, according to Mitchell.

A. Martin Rothbardt, Inc., Chicago, is the agency.

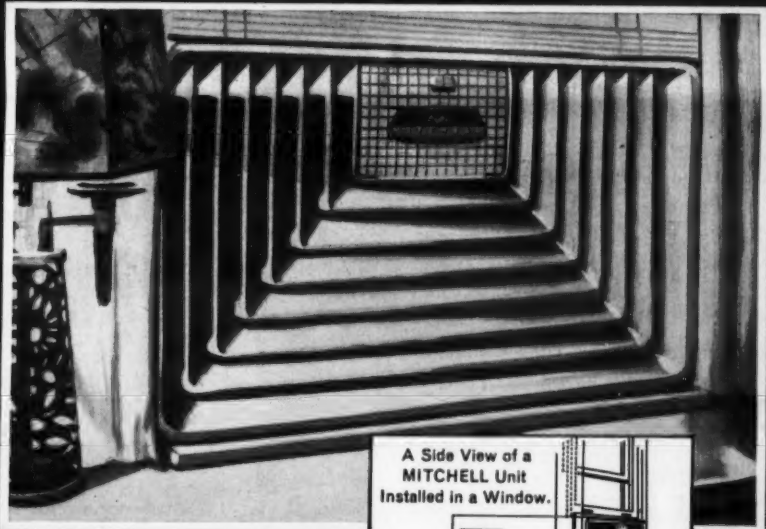
Ramseur Incorporates

GREENVILLE, S. C.—Ramseur Equipment Co. here has been incorporated with capital stock of \$75,000 to engage in wholesale distribution of air conditioning, refrigeration, and ventilation equipment, etc. V. D. Ramseur, Jr. is president.

it's SOUND BUSINESS to have the features customers demand in room air conditioners

MITCHELL TRUE FLUSH MOUNT

fits flat with the wall...



A Side View of a
MITCHELL Unit
Installed in a Window.

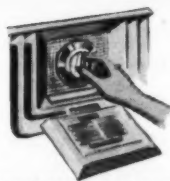
smart shoppers look for

a unit that
permits drapes
to be drawnnot a "bulger"

a unit that
blends with
decorating.....not a "protruder"

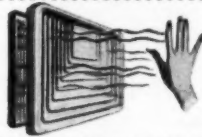
a unit that
permits any
furniture
arrangement...not a "space stealer"

smart shoppers buy MITCHELL



MITCHELL Single Knob Weather-Dial Control

Now one concealed knob controls all seven levels of comfort.



MITCHELL Stepped-up Heating

An instant flow of heat and more of it... any time... at no extra cost.



MITCHELL Sound Muffler

Engineered super-quiet—in fact, so quiet you'll scarcely hear it.

PLUS! Weather-Robot Thermostat ★ Nite-Cool
Arid-Dry ★ Cool and Ventilate ★ Exhaust ★ Ventilate

WRITE TODAY about a Mitchell franchise...
enjoy Dealer-Distributor Inventory Protection

MITCHELL MFG. CO., DEPT. AC-7
2525 N. Clybourn Ave., Chicago 14, Illinois

Gentlemen:

Please send complete details about the all new 1954 MITCHELL line. Include information on how I can become a MITCHELL FRANCHISED DEALER and get full benefits of your Dealer-Distributor Protection Plan.

Name.....

Store Name.....

Address.....

City..... State.....

20-Year Guarantee!

ON THE
WETTED
DECK
SURFACE



HALSTEAD
& MITCHELL
COOLING
TOWERS

2 to
100 tons

"Built like a Battleship"—economical, lastworthy. Pressure-treated wood in wetted deck surface guarantees against rotting or fungi growth. Stainless steel fan and shaft, plus individual cabinet coatings of Vinsynite, Vinyl Aluminum and chlorinated rubber, add important years of life.

Wholesalers in Principal Cities

Halstead & Mitchell

BESSEMER BLDG. PITTSBURGH 22, PA.

MITCHELL

the world's finest room air conditioner

MITCHELL MANUFACTURING COMPANY

2525 N. CLYBOURN AVE. • CHICAGO 14, ILLINOIS

In Canada: Mitchell Mfg. Co. 19 Waterman Ave., Toronto, Canada



Trade Mark registered U. S. Patent Office; Est. 1926.

F. M. COCKRELL, Founder

'The Conscience of the Industry'

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MARCH 22, 1954

Practical Advice From A Woman

RETAILERS who are wondering about how they might create more sales should listen to words of wisdom sounded out by Gladys Taber, who is contributing editor of the *Ladies Home Journal*.

As part of her column, "Diary of Domesticity," she reveals:

"When we buy, whatever it be, from a toaster to a refrigerator, we buy equipment on which we know we can get service. For what use is a piece of equipment that isn't repaired when anything goes wrong with it?"

"We learned the hard way when we first moved to the country. Now when friends ask us why we picked that particular range or refrigerator, we say simply, 'It's the brand Mr. Campox services.'"

"For our freezer, we passed up a really dazzling number with many advantages in favor of a simpler type on which the service is always quick, efficient, and sound. Any time, day or night, that the freezer stops breathing, I know a phone call will bring the freezer man all the way from Watertown, and the last time it was on a Sunday evening, and he brought cartons in which to carry the supplies back to a locker for us in case the freezer couldn't be immediately fixed!"

"We now know that it is the maker's interest in keeping the equipment running that matters most. Another thing we learned was that it is sometimes hard to persuade local dealers to service a piece of equipment unless it happens to be purchased from them. We have friends who have bought equipment in one state, moved to another. When the equipment developed trouble, the first question asked was, 'Did you buy it here?'"

They'll Do It Every Time Jimmy Hatlo



A dealer's reputation for service can induce a purchaser to quit shopping around for a lower price.

Most authorities in the durable goods merchandising field deem it desirable for the dealer to maintain his own service facilities. But those dealers who don't maintain their own service departments can control the quality of service which independent servicemen do in their name.

By maintaining a record of calls received, the REAL GOOD dealer could determine how quickly a call was handled. Furthermore, he would have a record of calls complaining about poor service.

Keeping the refrigerators you sell in good operation may mean a conglomeration of headaches—but it can also mean survival to the alert dealer.

Our Children Must Pay Off Our Tremendous National Debt

FEW AMERICAN CITIZENS realize that our enormous National Debt is, perhaps, the most serious problem they face. Its oversize and overhang affects every one of us voters.

For more than twenty years our nation has been living beyond its means. Politicians have delved into accumulated wealth—and borrowed from children's piggy banks—to pay bills they've incurred to win votes.

Like dope addicts, too many politicians aren't trying hard to stop this slide-into-bankruptcy. They talk economy, but our national debt continues to rise.

We know we should not incur further deficits. However, pressure groups help politicians provide "good reasons" why we should.

Our national debt is too close to the ceiling limit of 275 billion dollars. Such a debt is almost beyond the ability of any of us to comprehend. It is double the assessed value of all the real estate in America!

Interest alone on that debt, now running at an annual rate of about seven billion dollars, is more than the total national budget during any peacetime year prior to 1936.

Our brush-off attitude toward This Debt is more serious than the debt itself, a great many businessmen believe.

Inflationary Funny Money always has destroyed any nation that has indulged in it.

Debauching the currency, furthermore, plays directly into the hands of the Communists. Lenin described inflation as "the surest way to overturn an existing social order."

We started off on this road to national destruction when Roosevelt seized control of our financial institutions. We were deluded by his new theory that "it makes no difference how much we owe so long as we owe it to ourselves."

Already that theory is being revived—as group after group complains that it isn't so easy to make a fat living as it used to be.

As a matter of fact, we have been living in a fool's paradise—and it's high time we came to our senses.

To the rational sense, materialistic philosophy has the appeal of a torch that is lighted near at hand. Its illumination attracts the eye that is focused on local things. Like the firefly, the light it sheds is cold; powerless to penetrate the night. And though it makes a show of brilliance in the darkness, it gives you no real bearings in the wilderness of thought.—OSCAR OSTLUND.

"Until psychologists and biologists have done much more tinkering than seems likely, the individual remains firm and each of us must consent to be one, and to make the best of the difficult job."—E. M. FORSTER.

More in '54

PACKAGED AIR CONDITIONERS

You sell more
with
More to sell!

When you sell Brunner Air Conditioners you'll notice . . . Brunner gives you more to sell. More features that your customers want—more models with more flexibility to fit any application. And more sizes, too—for Brunner Air Conditioners are now available in sizes up to 20 H.P. And, of course, the famous Brunner slow-speed compressor in every model means more dependability on the job . . . more satisfaction for your customer—and more profits for you.

YOUR BRUNNER DISTRIBUTOR has the complete story on these great new Brunner Air Conditioners. See him—see why you'll sell more with the air conditioner that gives you more to sell . . .

BRUNNER MANUFACTURING CO., Dept. A-344, UTICA, N. Y.
The Brunner Co., Gainesville, Ga.
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario



NEW BRUNNER AIR CONDITIONERS

— in a variety of models for within-room or duct installation, are available in 2, 3, 5, 7½, 10, 15 and 20 H.P. sizes. Completely self-contained, easy to install, easy to service.

BRUNNER
SINCE 1906

means

More in '54

As seen in
The Saturday Evening
POST

BRUNNER AIR CONDITIONING IS ADVERTISED IN THE SATURDAY EVENING POST



PIES ARE ALWAYS FRESH LOOKING when taken from this custom-built display case in Denver's White Spot Restaurant. Slots in the bottom display shelf permit circulating cold air to remove excess moisture.

And Sales, Too

Moving Air Keeps Pies from Drooping

DENVER—One of the worst problems of displaying highly-perishable pies, delicate pastries, and other desserts in the restaurant—that of moisture accumulation which spoils both the taste and the appearance of such items—has been solved with the installation of a \$1,500 custom-built display refrigerator at the White Spot Restaurant on South Broadway here.

The restaurant, an extremely smart, rapid-service institution, had experienced considerable difficulty with whipped cream pies, cream puffs, eclairs, custard-containing items, etc., when displayed in a standard glassed-in refrigerator, without circulating air.

EYE APPEAL LOST

While the cold was adequate to prevent spoilage, the lack of circulation caused "drooping" of meringue and whipped cream. This resulted in the loss of eye-appeal and, consequently, sales.

W. J. Clements, owner, went to Ideal Refrigeration Co., custom refrigeration builder of Denver, for the solution. After a study, it was determined that the cure lay in constant circulation of chilled air, which would prevent moisture accumulation.

The result was the \$1,500 display

fixture, constructed of stainless steel and glass, which is prominently featured near the front of the restaurant where every entering customer sees it.

In design, the refrigerator resembles a glass display case, set atop a larger stainless steel, four-door reach-in unit. The elevated display case, with four glass shelves permitting space for 60 to 80 cuts of pie and other desserts, is supported by four glass walls which slant in sharply from the base to the 3½ by 2½ dimensions of the glass case.

No refrigeration coils appear in the upper, glassed-in portions. They are concealed, instead, in a blower unit in the cabinet below.

The blower unit is served by a ½-hp. Tecumseh compressor, supplying two banks of coils mounted at the top of the cabinet. A blower fan, circulating approximately 800 c.f.m., is centered in the refrigeration coil.

SLOTS IN TOP

Cold air is forced into the upper glass case through the center four or eight 10 by 12-in. slots cut through the metal top. The air is drawn out for recirculation through the four outer slots, two at either end of the glass case.

The temperature can be maintained at 10° F. with ease, according to Clements, but in ordinary operation is held around 25°.

Sliding glass doors around the base of the case permit ready access to the center, diagonal area which is used for such items as juices and salads.

In use for several months, the display case has resulted in a sharp increase in the sale of whipped cream and custard desserts, as well as eliminating profit leaks caused by spoilage and loss of eye-appeal, it was reported.

Charles Bengle Appointed Worthington Section Head

HARRISON, N. J.—M. M. Lawler, Worthington vice president, Air Conditioning and Refrigeration, announced recently that Charles V. Bengle has been appointed manager of the Applied Systems Section in Air Conditioning and Refrigeration at the Harrison Works.

C. V. Bengle

Bengle was graduated from Rensselaer Polytechnic Institute with a B.M.E. degree in 1938. After four years' experience in the field of chemical process air conditioning and refrigeration with Monsanto Chemical Co., Indian Orchard, Mass., he joined Worthington Holyoke Works in 1942 as an application engineer.

He held this post for four years and then served successively as air conditioning and refrigeration district representative in Worthington's Cincinnati, Nashville, and Detroit offices.

A member of the American Society of Refrigerating Engineers and the American Society of Heating & Ventilating Engineers, Bengle is a contributor to air conditioning trade publications.

Commercial Refrigeration

J. R. Vernon of Johnson Service Co. Dies at 58

MILWAUKEE—J. Rexford Vernon, 58, vice president and sales promotion manager of Johnson Service Co. here, died Feb. 17 at his home in Waukesha, Wis.

Graduated from the University of Wisconsin College of Engineering in 1918, he joined Johnson Service Co. in 1923 as a sales engineer in the company's Chicago office. In 1933 he was named advertising and sales promotion manager.

Riday to Head South Bend Office for Cutler-Hammer

MILWAUKEE—F. A. Wright, sales manager, Cutler-Hammer, Inc., recently announced the appointment of J. T. Riday as manager of the electrical firm's South Bend, Ind. branch sales office. Riday succeeds the late Terry Fisher.

Riday was formerly at the company's Davenport branch office.

More Jewel Meat Depts. Changed to Self-Service

CHICAGO—Of the 164 stores being operated by Jewel Tea Co. at the end of 1953, 67 had self-service meat departments and 78 were air conditioned, the firm reported recently. Meat departments in 34 stores were converted from service to self-service.

Two Trane Sales Offices Moved to New Locations

LA CROSSE, Wis.—The Trane Co. has announced the new location of two sales offices.

The Greenville, S. C. sales office is now located at 214 McDaniel Ave. R. G. Beck is sales engineer in charge of the office.

The Duluth, Minn. sales office is now located at 2830 W. Superior. Robert T. Dean is sales engineer in charge.

PLENTY FOR FREE
For "easy-to-get"
product information...
use coupon on "What's
New" page.

new low-cost high capacity MUELLER BRASS CO.

GUARDSMAN DRIER dries your refrigerant

faster and keeps it moisture-free



4½ sq. in. dual dome screen plus 100 mesh inlet screen provides 61% more filter area.

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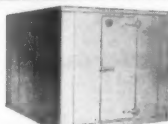
available in a wide range of sizes from 4 to 32 cu. in. with suitable end connections; packed in sturdy, dustproof containers.

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Air Conditioning Atlanta's Newest Station Gives Distributor Clean Sweep of Market

ATLANTA—The distinction of having air conditioned all three television stations in Atlanta was claimed by Carrier Atlanta Corp. here when it won the job of cooling station WLW-A-TV, Atlanta's newest station, last fall.

C. F. Daugherty, Jr., chief engineer for Carrier Atlanta, said that the company installed air conditioning equipment in WSB-TV in 1949 and in WHEA-TV in 1951. Both of these installations were made to plans and specifications drawn up by others. But with WLW-A-TV, he said, Carrier Atlanta designed the whole job.

For this installation, he explained, he divided the station's building into five zones, with separate systems to serve each zone.

Zone 1 consists of Studio A; Zone 2 Studio B and control room B; Zone 3 first floor offices and lobby and talent lounge in the basement; Zone 4 second floor offices, sales conference room, basement offices, and shops; and Zone 5 the master control room and announcer's booth on the first floor and the film projection rooms in the basement.

All cooling equipment is located in a basement machinery room and totals 77½ hp. in capacity. All systems also provide heating

through steam coils located in the fan coil sections and supplied from a boiler located in the basement boiler room.

Details of the installation, indicating the problems that had to be met and how they were solved, were outlined by Daugherty. Here is his description of the five air conditioning systems.

KEEPS PERFORMERS COOL

System No. 1 is to condition Studio A. Because of the critical nature of TV studios, it is universally accepted that each studio be a separate zone system in itself.

Because of the extremely high radiant heat load of the lights in the TV studio, recommended room conditions are 75° d.b. temperature and 50% r.h. It has been found that above these room conditions, television performers perspire visibly before a television camera. The air conditioning system for the studio has to be ready for operation 24 hours a day.

The air conditioning load within the studio consists almost entirely of the lights. In Studio A we have designed for 33 kw. of lighting and 100 people. The air conditioning system is to provide ventilation at the rate of 7½ c.f.m. of outside air per person.

The transmission load through roofs, walls, and floors is practically negligible in consideration of the high people and lighting load. Because of the high lighting load, the ratio of sensible heat to total heat is extremely high.

To balance this load, high quantities of air must be moved into the studio. This further complicates the problem of air distribution in consideration of the low noise level required.

Because of the high sensible heat load in the studio, thermostat control is ample to control the temperature and humidity. This system is to be controlled from a return air thermostat located at the equipment.

In order to reduce the noise level generated by the air conditioning system, large air ducts completely acoustically lined and treated were required. The air distribution ducts are designed on a maximum velocity of 750 f.p.m.

It was found that by taking credit for stratification, the roof load can be reduced approximately one third by ventilation at the roof level. In order to take advantage of this further reduction in load and to provide an escape for the fresh air to be supplied, a gravity exhaust vent was installed in the



roof. In order to reduce the possibility of outside noise transmission through the gravity exhaust duct to the television studio, the exhaust duct is lined with acoustical material.

SIDE WALL GRILLES USED

Side wall grille distribution was selected for several reasons. This method of distribution eliminates possible interference of the ductwork with lights, microphone booms, and stage sets.

In addition to the above, side wall grilles are four-way adjustable to provide maximum flexibility in the air distribution pattern. This is particularly important to control the supply air and to prevent it from striking microphones within the studio. The side wall grilles are selected for a maximum sound level at the grille of 30 decibels.

The return grille is located under the viewing window of the master control room. The return duct is acoustically lined and return grille is sized for very low velocity to again minimize the noise level.

It was felt that this location is the most desirable because the viewing window from the master control room must be kept clear for visibility at all times. This means that obstructions cannot be placed up against the return air grille.

The air conditioning load in TV studio A, we calculated to be 238,170 B.t.u./hr. The total air requirements we calculated to be 8,850 c.f.m. To match this load we selected one Carrier 39H7 Weathermaker with a 4-row DX coil.

STUDIO, CONTROL ROOM IN SAME ZONE

System No. 2 conditions Studio B and control room B. The precautions in design are essentially the same as those for Studio A.

The air conditioning load was calculated to include 10 kw. of lights in Studio B, 3 kw. of equipment in control room B, and 30 people in both areas. Adequate relief for a suitable quantity of fresh air is provided in the ceiling of Studio B.

Great care has been taken to prevent sound transmission between control room B and studio B in both the supply and return ducts.

This system is controlled by a

return air thermostat located at the equipment.

For this system, one Carrier model 39H5 Weathermaker with 4-row DX coil was selected.

System No. 3 conditions the first floor offices and lobby, and talent lounge in the basement. These spaces lend themselves to normal office application. Since the lobby area has large areas of glass and the other rooms are without glass, a definite zoning problem was indicated.

Because of the wide variation in loads between the lobby and offices normal volume control zoning did not suffice. In order to adequately handle the zoning problem, a 39U7 Carrier zoning Weathermaker was selected to provide adequate control.

Room conditions were selected at 80° d.b. and 50% r.h. All of these spaces operate at approximately the same time and for the same hours. Control of the lobby zone is accomplished by a proportioning type thermostat located in the lobby. Control of the office spaces is accomplished by a room thermostat located in the hallway near the return air duct.

OPERATING HOURS DETERMINE ZONING

System No. 4 serves the second floor offices, sales conference room, basement offices, and shops. These spaces fall into one group due to their same operating hours. The air conditioning design is based on standard office comfort air conditioning.

This system is divided into four basic zones. Three zones are on the second floor—east and south, west, and interior zone. The basement spaces are considered the fourth zone.

The east and south zone is further zoned by a volume damper (Continued on next page)

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—Carl Muno, McCarty Bros. Equipment Corp., Chicago



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Write for Catalog Page 707-14

THE LAU BLOWER COMPANY
DAYTON 7, OHIO

World's Largest Manufacturers of Air Conditioning Blowers

5-Zone System for Atlanta Station--

(Concluded from preceding page) control serving the east zone and controlled from a thermostat located within that zone.

The conference room has a large northern glass exposure. To compensate for this exposure both summer and winter this room is served from both the interior zone and the west zone.

GLASS EXPOSURE CREATES SPECIAL PROBLEMS

It was apparent that the glass exposure would introduce problems of heating which were not common to the other interior zones. Therefore, the west zone duct was extended to compensate for this exposure.

All spaces in system No. 4 operate at the same time and during the same hours. Control of the different zones is accomplished by the location of a room-type proportioning thermostat in each zone.

An acoustical return system was employed for the rehearsal studio to eliminate noise transmission from that studio to other spaces. This system is serviced by a Carrier 39U9 zoning Weathermaker with 6-row DX coil.

System No. 5 serves the master control room and announcer's booth on the first floor, and the film projection rooms in the basement. Because of the high radiant heat load emitted by the electronic equipment and film projectors, design conditions were selected at 75° d.b. and 50% r.h.

This system operates 24 hours a day. Control of the system is by a room thermostat located in the master control room.

Because of the high equipment load in the master control room and the absence of this load in the announcer's booth, electric reheat is provided in the announcer's booth to maintain comfortable room conditions. Heating of these spaces is controlled by a return air proportioning type thermostat controlling the modulated steam valve.

ACOUSTIC TREATMENT FOR BOOTH DUCTS

The supply and return ducts from the announcer's booth are completely treated acoustically. Particular caution has been exercised in the selection of the supply air grilles for the master control room due to the high air quantity and the low noise level required.

This system is served by a Carrier model 50K8, 7½-hp. self-contained Weathermaker located in the basement adjacent to the unit which serves System No. 1. This unit operates on city water for condensing. Due to the necessity of this unit operating during the winter time and the difficulty in finding a convenient location for the cooling tower, it was felt that this system could operate most satisfactorily on city water.

A separate exhaust system ex-

hausts the television equipment racks located back of the master control room. To provide adequate ventilation for this space, 4,600 c.f.m. of air was figured. As the cleanliness of the air is most important in this room, a filter bank was placed on the air intake for this exhaust system.

An exhaust duct connects the fan to the hoods of the equipment with manual dampers for balancing installed in each branch take-off. This ductwork is necessary to insure proper circulation and ventilation of the equipment and to prevent air by-passing the equipment racks.

A Carrier model 27N5 fan section provides this exhaust ventilation. This fan section is supported from the ceiling of the room and exhausts through the outside wall. Weatherproofed and bird screened intake and discharge louvers are provided.

Another exhaust system exhausts the air conditioning equipment room in the basement. This system provides for the introduction of outside air and the positive exhaust and ventilation for this space.

PROP ROOM HEATED

Heating is provided by Carrier ceiling direct gas-fired unit heaters for two prop storage rooms.

As cooling systems 1, 2, and 3 are designed for 24-hour operation, they are grouped together in one refrigeration cycle. Systems 1 and 2 are designed for year-round cooling. Therefore, an evaporative condenser was used. If a cooling tower were considered for this application, the danger of freeze-up in the winter time would be critical.

In order to control the capacity of the evaporative condenser during the winter-time operation, it was necessary to cycle the evaporative condenser circulating water pump. This has been found as the most practical means of controlling the condensing capacity during winter-time operation.

The combined maximum loads of systems 1 and 3 operating simultaneously is 33.4 tons of refrigeration. To handle this refrigeration capacity Daugherty selected one Carrier model 5H60, 40-hp. compressor. One compressor is selected for economy of operation and to provide up to four steps of capacity control.

AUTOMATIC CONTROL ADJUSTS TO ACTUAL LOAD

Through the automatic capacity control built in the compressor and operated from suction temperature, Daugherty was able to obtain this wide range of capacity control which automatically adjusts itself to the actual load conditions in the spaces.

Additional safety features beyond what is considered normal include an oil pressure safety

switch on the compressor to automatically stop the compressor in case of oil pressure failure. The compressor is wired on "pump down and pump out" control which keeps the crankcase purged of refrigerant at all times. Crankcase heaters are installed to maintain crankcase temperature.

System No. 4 is connected to one Carrier model 5H40, 30-hp. compressor. This system operates on a 12-hour per day schedule and is connected to the same evaporative condenser as the 5H60 compressor.

Peterson, Wilson Named To New Honeywell Posts

MINNEAPOLIS—Appointments of C. L. Peterson as divisional vice president of Brown Instruments Div. of Minneapolis-Honeywell Regulator Co. and O. B. Wilson as general sales manager were announced recently by H. F. Dever, president of the division.

Peterson, who had been general sales manager of the division since July, 1952, will devote the major part of his time to sales policy matters and long-range planning. In addition, he will assist Dever in carrying out managerial duties at the policy-making level.

Wilson, industrial instruments sales manager since January, 1953, will assume active administration of the entire divisional sales department.

Airtemp To Air Condition Hospital In Singapore

DAYTON—A \$60,000 contract to air condition portions of the five-story Kandang Kerbau hospital, Singapore, Malaya, has been awarded to the Kian Gwan firm of Singapore contractors and distributors of Chrysler Airtemp air conditioning in Malaya, Chrysler Airtemp reported.

The unique installation includes room air conditioners, packaged units, and a central duct system with two 30-hp. radial compressors.

Conditioned air is to be distributed throughout the hospital through furred-in ceiling ducts. Corridors will act as return air ducts.

The heavier central station equipment will be housed in a penthouse equipment room. The packaged units and room air conditioners will be used on lower floors.

S. Y. Hon, manager of Kian Gwan's air conditioning division, will supervise the installation.

Lazarus Store Gets Cooling

WILKES-BARRE, Pa.—Lazarus Department Store, 57 S. Main St., is installing an air conditioning system in basement, first, and second floors at a cost of \$35,000. A contract for the installation has been awarded to Kingston Electric Co.

Col. McCoy Named Exec. Secretary for Ft. Worth Air Conditioning Assn.

FORT WORTH, Texas—The Fort Worth Air Conditioning Association has announced the appointment of Col. Edwin D. McCoy, U. S. Army Retired, as executive secretary and the location of permanent headquarters in the Neil P. Anderson building.

Col. McCoy, well known in Fort Worth as commanding officer of the Quartermaster Depot from 1948 through 1952, will act as business manager and coordinator for the association as well as liaison between the air conditioning industry, allied trades, and city planning, the announcement further stated.

According to Col. McCoy, the chief goal of the association this year will be to establish a code of ethics subscribed to by the Fort Worth air conditioning industry as a means of setting up minimum standards of installation and business practices to protect the buying public from unethical and transient firms.

These minimum standards will be made available to builders and architects for guidance in proper planning for air conditioning, Col. McCoy said.

A membership drive is now under way, the announcement concluded.

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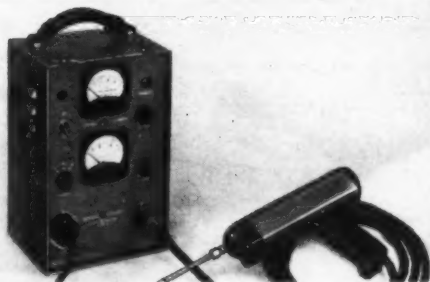
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Once again, Mueller Climatrol has responded to your needs. The new companion winter-heating and summer-cooling units permit you to sell the right size in both heating and cooling units, irrespective of climates.

The heating unit shown at left above is available in four sizes — 80,000, 100,000, 125,000 and 150,000 Btu input. The type 906 cooling unit, at right above, is available in 2-hp and 3-hp sizes. Each size of the heating unit may be interchanged with either of the cooling models—thus giving you real flexibility.

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engineering — new efficiency . . . new, attractive styling . . . new, handsome Mountain Spring Green finish.

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What's New

When requesting further information on new products, please use "Information Center" form.

Rubber Hub Fan, Timer Introduced by Atlas

—KEY NO. D-340—

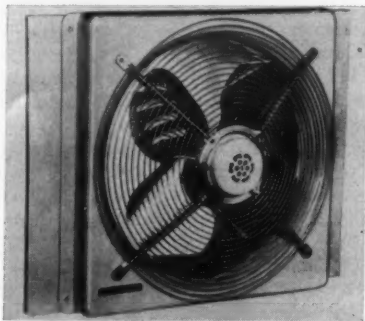
ST. LOUIS—A new quiet-operating 20-in. window exhaust fan and a fan timer that will automatically turn off a fan at a predetermined time have been announced by the Atlas Tool & Mfg. Co. here.



The fan features a specially designed rubber hub that isolates motor noise before it can be transmitted to the blade. Rubber mountings of grille, motor, and the four-petal blade are additional safeguards against vibration and rattle noises.

The "Atlas-Aire" model K20 delivers 3,500 c.f.m. It is equipped with a heavy-duty General Electric six-pole, 110-volt, 60-cycle, a.c. motor and three-speed control.

Of all steel construction, the fan is finished in light gray baked enamel. The grille is made of plated spiraled wire. The 32-lb. fan



(shipping weight 38 lbs.) may be placed in windows from 26 to 48 in. wide. Entire mounting arrangement consists of two thin metal strips installed at the side of the window. The fan slips in and out of these strips. The fan is 25½ in. high.

The timer may be used with any fan up to ½ hp., 120 volts, 60 cycle a.c. Its cord is plugged into any electrical outlet with the fan cord plugged into the timer. The timer is set at the desired number of hours operation (up to 20 hours), and the fan automatically shuts off when the time is up.

Called the model FT20, the timer is finished in natural gray and green. Suggested list price is \$9.95.

Small Chilling Machine Has -70 to -120° F. Range

—KEY NO. D-341—

CINCINNATI—A new low temperature chilling machine designed to meet the needs of small heat treating departments and laboratories has been announced by Cincinnati Sub-Zero Products Co.

Weighing just 500 lbs., and mounted on casters, it is just 20 in. long, 18 in. deep, and 43 in. high. The capacity of the chilling chamber is 1 cu. ft. Temperature range is from -70° to -120° F.

With the addition of an air circulator, the temperature range of the unit will be from 70° F. to -120° F. Temperature range from 250° F. to -120° F. can be obtained with the addition of a heater. For testing requirements, a wide variety of control instrumentation is available, including indicating and recording control thermometers.

The refrigeration system is hermetically sealed, 110 volt, single phase, 60 cycle. Unit may be connected to a standard outlet and requires no special installation procedure.

The machine has a baked enamel blue hammer tone finish. The chilling chamber, 12 in. by 12 in. by 12 in., is of electric welded steel, pressure tight, hot dipped zinc coated to specifications of American Hot Dip Galvanizers Association. The chamber has rounded corners.



Horizontal Cooling Unit Requires No Floor Space

—KEY NO. D-343—

CINCINNATI—A new horizontal space cooler for installation over or under joists is announced by the Williamson Heater Co. here.

Designed for use with furnace blower, the new refrigerated cooling unit can be installed in crawl or attic space with under-floor perimeter or above-ceiling forced warm air furnace systems. It is available in 2 and 3-ton sizes.

Easy installation and simplified maintenance are said to be two of the main features of Williamson's new horizontal space cooler. Unit is shipped in one section with no special moving equipment needed, according to Williamson. It is claimed that the unit is so compact it requires only 5.4 sq. ft. base area.

Designed to provide proper cooling and dehumidification, the new horizontal space cooler is said to be completely automatic. Only thermostat setting is required to operate the refrigeration system.

Standard equipment includes cabinet with 16 by 18-in. connecting collars in both sides and access doors to controls, coil, and condenser cleanout; complete hermetically sealed refrigeration system; cooling thermostat; transformer; water regulating valve; motor overload protector; high and low pressure cut-out control; starting capacitors; running capacitors; high voltage starting contactor; and starting capacitor cut-out relay.

Sink, Range, Refrigerator Combined In Acme Model

—KEY NO. D-342—

LONG ISLAND CITY, N. Y.—Acme-National Refrigeration Co., Inc. here, manufacturer of "space-saving" refrigerators, is currently offering its newest model—the "Acme Space-Master," a "three-in-one packaged kitchen."

The unit consists of a stainless steel top and sink, a range, and 5-cu. ft. refrigerator, and fits in a space less than 2 ft. by 2½ ft. It is designed for use in summer cottages, hotels, motels, trailers, and doctors', dentists', and business offices.

The stainless top and sink are easy to clean and resist denting, the company said. The sink "takes the largest pots and pans," it was stated.

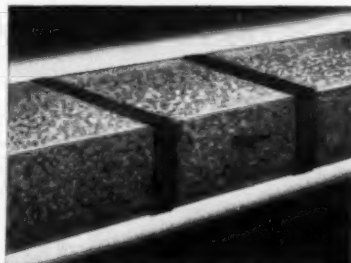
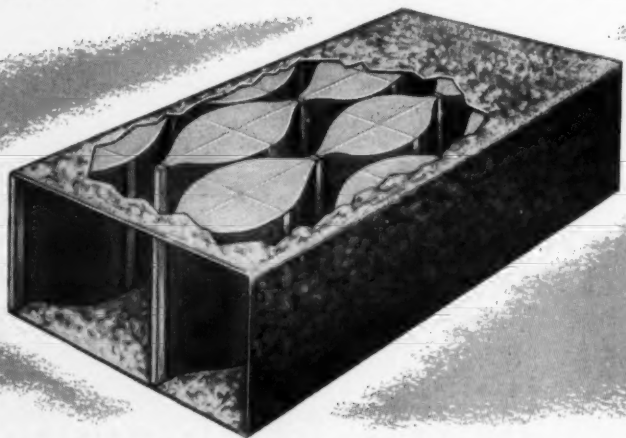
The refrigerator has an automatic light, a double bottle rack in the door, and a sealed Tecumseh unit.

The entire mechanism is serviceable from the front. The freezer holds 9 ice cube trays or 12 standard frozen food packages, Acme said.

The range is available for use with natural, manufactured, or bottled (LP) gases, or with electric burners for 220 V. or 110 V. "plug-in" use.

NEW *Aircoustat* BRINGS PACKAGED SILENCING TO AIR CONDITIONING SYSTEMS

One 7 foot unit more effective
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The concern which brought packaged silencing to the aircraft industry, taming the loudest noises on earth — jet engine testing — has applied engineering principles of sound control to the air conditioning field. Result: the amazing ISC AIRCOUSTAT . . . a packaged unit for quieting fan and air noise in air conditioning systems.

Compact, economical AIRCOUSTATS produce amazing results. One 7 foot unit, for example, reduces the noise level below what 100 feet of old fashioned duct lining could accomplish, and pressure drop is less than if the entire duct had been lined. Acoustically engineered AIRCOUSTATS assure correct silencing of conditioned areas . . . eliminate hit or miss efforts at noise control.

Constructed of galvanized steel or aluminum, AIRCOUSTATS are incorporated as part of the duct work . . . joined by flexible connections . . . require no special tools for installing. They are available in 11 standard sizes for use with all styles and sizes of ducts, and in 3 types to meet any desired conditions. Selection is no problem with AIRCOUSTAT. If it fits geometrically, it fits acoustically.

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What's New (Con't)



Spotaire System Installed In Model Ranch House

—KEY NO. D-344—

BEVERLY HILLS, Calif. — Air conditioning was featured in the Cliff May model ranch home built on the roof of the W. & J. Sloane building here.

The model home was equipped with a Drayer-Hanson "Spotaire" cooling system that requires no ducting.

Individual zone-controlled units are built into a small enclosed area above the hallway or in the wall. These units operate independently so that any area or all of the house can be cooled as desired by the occupant. The units are equipped with a large, slow speed fan. The refrigeration unit is placed in the garage.



Produce Case Designed For Small Store Operator

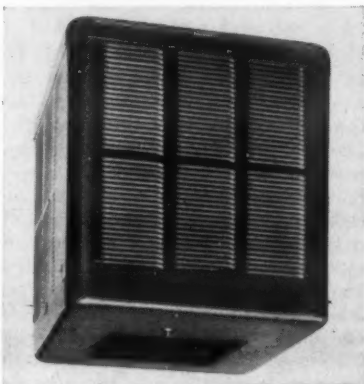
—KEY NO. D-345—

FLEETWOOD, Pa. — A single-duty porcelain self-service produce case designed for the small store operator has been introduced by Pinnacle Equipment Corp. here.

The case, made in 6, 8, and 10-ft. lengths, is narrow enough to pass through a 36-in. doorway. Featuring three levels of storage and display areas, it has refrigeration in all shelves.

Exterior front, ends, and wearing surfaces are of white life-time porcelain. Fluorescent light floods the vegetable and fruit sections.

Self-contained models are also available, the company said.



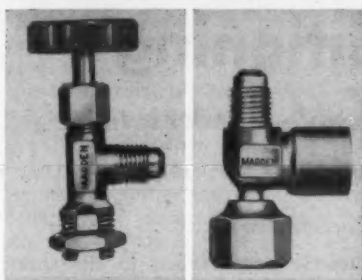
Down-Draft Cooler Added To Thermador Line

—KEY NO. D-346—

LOS ANGELES — A new 4,000 c.f.m. discharge cooler has been added to the evaporative cooler line manufactured by Thermador Electrical Mfg. Co. here.

Designed specifically for roof mounting, where it is desired to direct air vertically through the roof into a central hall or ducting system, this cooler offers maximum intakes of filtered air through all four sides and blows it straight downward, according to the company.

Thermador now has 10 models.



Port Valve, Swivel Tee For Hermetics Offered

—KEY NO. D-347—

CHICAGO — A new "Duo-Test" port valve that provides a means for a permanent gauge port on hermetic units and a new swivel tee for use in close, hard-to-get-at spots on hermetics were introduced recently by Madden Brass Products Co. here.

The port valve can be mounted in any position without special tools. The forged brass body is machined and the gasket is recessed. It has a 1/4 in. male flare. Tubing sizes are 1/4, 5/16, and 3/8 in. o.d.

The swivel tee provides a means of installing a pressure relief valve or gauge quickly. It also provides access for purging, charging, testing, etc. Its swivel action makes it applicable in many other cases where limited working space is a factor. Male and female flares range from 1/4 in. to 3/8 in. Pipe size ranges from 1/8 in. to 3/8 in.

Test Chamber Cycles Parts Through Hot, Cold

—KEY NO. D-348—

CINCINNATI — A new automatic testing chamber which automatically cycles test parts through alternate hot and cold temperatures, has been announced by Cincinnati Sub-Zero Products Co.

The unit, which has a test chamber 30 in. long by 11 in. wide by 16 in. deep, produces first a low temperature, down to -120° F. It then raises the temperature to 200° F. and will repeat the cycle as many as 100 times. Holding time at high and low levels is variable with a dual-set timer which determines half-cycle time anywhere between 0 and 120 minutes.

The Sub-Zero Test Unit ST-120-3 is based on standard Sub-Zero industrial freezer design. To allow the automatic cycling, it has been equipped with explosionproof and waterproof strip heaters rated at 3,500 watts and the automatic programming controls.

Illustrating operation, a recent installation was built to test transistors by chilling and heating. Low temperature was set at -67° F. and high temperature at 185° F. Design called for the unit to go from low to high and from high to low in a total of 60 minutes. In actual tests it went from -67° to 185° in 13 minutes and from 185° to -67° in 28 minutes, a total of 41 minutes.

To operate the machine, high and low limits are set on the re-

cording-controlling thermometer. Timing at each limit is set on the dual-set timer. The number of cycles is set on the counter. The parts are inserted and the "start" button pushed.

Starting on the low temperature cycle, the unit lowers the temperature to the pre-set -67° F. At the end of the pre-set time interval, the cooling equipment cuts off and the heaters come on. When air in the chamber reaches 150°, a fan comes on to circulate the warm air.

At the end of the pre-set hot side of the cycle, the heaters go off and warm air is exhausted from the chamber through an automatic damper.

When air in the chamber reaches room temperature, the damper closes and the cooling equipment swings into action. The cycle is repeated up to the pre-set number of cycles.

Other equipment on the unit, adding to its utility for all types of instrument, equipment, and material tests, includes a 24-hour chart recording thermometer, and a 2-in. porthole through which may be run test leads, etc.

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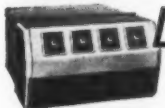
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Insulation In Air Conditioning

How Far Should the Designer Go To Prevent Possible Condensation On Ducts? Stone Offers Some Suggestions

By J. F. Stone, Manager, Refrigeration Div., Johns-Manville Corp.*

In laying out an air conditioning system one question may arise which does not trouble the designer of refrigerating systems intended to produce severe cold. Whether to insulate or not. The man who is planning to freeze something knows he has to use insulation and quite a bit of it. Its value on some parts of comfort air conditioning systems may be questionable. Generally, it is not justifiable as a matter of economics in the sense that significant savings in power or machine size can be effected by insulating.

Purpose of Insulation

The purpose of insulation then seems to be better control of outlet air temperatures and the prevention of condensation. For these purposes relatively thin insulation is adequate. A good rule of thumb is that 1 in. of thickness will take care of 25° to 30° over-all temperature difference. Since a major part of the cost of insulation applied is labor, it is rarely worth

while to use less than an inch. You save little and may be decreasing your margin of safety too much.

One thing I should like to point out to the younger men. There is no such thing as stopping condensation under all conditions. If you have some special condition involving very high humidities, insulation alone will not prevent sweating. Fig. 1 illustrates this.

Infinite Thickness

Mathematically, the point is that as you approach 100% relative humidity, prevention of condensation means you have to eliminate heat flow to attain zero temperature difference between air and insulation. As no material has a conductivity of zero, you arrive at the absurd position of requiring an infinite thickness of insulation.

Sometimes it is possible to secure results in another way when insulation alone will not serve the purpose. The calculation of the thickness required to stop condensation is a simple proportion based on the fact that temperature drop to any point in a structure is

directly proportional to the thermal resistance to that point. If it is a surface temperature we want, we can write:

$$\frac{\text{surface resistance}}{\text{total thermal resistance}} = \frac{\text{temp. diff. air to surface}}{\text{total temperature difference}}$$

According to the Ashve Guide, heat transfer across surface is about 1.65 B.t.u. per hr. per sq. ft. per deg. F. The surface resistance is the reciprocal or 0.61. Heat transfer at a surface increases as the air velocity goes up so with rapidly moving air there is almost no surface resistance. Use of this fact can sometimes be made where increasing the amount of insulation is not a practicable solution.

A Practical Example

As a practical example, a duct has to be insulated which will transport air at 48° F. to 50° F. through an area where conditions of 80° F. and 65% to 75% relative humidity may exist. One inch of good insulation should be about enough. Assuming an average

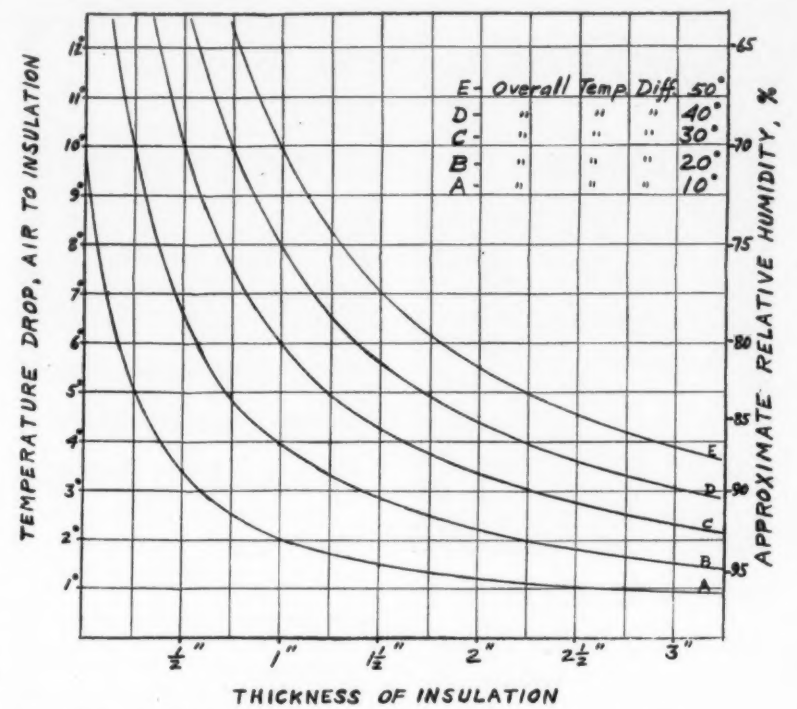


FIG. 1—Under very high humidities insulation alone will not prevent sweating, as the flattening of the curves above indicates.

insulation conductivity of 0.30, the resistance of 1 in. is 3.33. Adding the surface effect the total resistance is 3.64, then:

$$\frac{.61}{3.64} = \frac{t_s - t_a}{80 - 50} \text{ and } t_s - t_a \text{ is } 5, \text{ making } t_s = 75.$$

With a dry bulb of 80° F., 75° F. as the dewpoint corresponds to about 85% relative humidity, so the 1 in. thickness is quite enough. The question of the minimum thickness to prevent condensation can be attacked directly instead of setting up the proportion shown. By appropriate substitution the statement of proportionality can be reduced to the following form, where x is the necessary thickness, Rs is the surface resistance, k is the insulation conductivity, t_a is the air temperature, t_s the operating temperature (that of the surface to be insulated), and t_i is the surface temperature of the insulation:

$$x = R_s k \left[\frac{t_s - t_a}{t_s - t_i} - 1 \right]$$

Curved Surfaces

This equation applies only to flat surfaces. When the attempt is made to transform it to fit curved surfaces the result is useless, for it comes out with a monstrous exponent that is obviously much more trouble to deal with than it is to make a couple of trials with comparatively simple expressions. My own method is to pick out a thickness by the rule of thumb quoted and try it for size. On cylindrical surfaces, the insulation resistance is given by the expression:

$$R_{is} = \frac{r_o \log \frac{r_o}{r_i}}{k}$$

Where r_o = radius of outer surface and r_i is the radius of the inner surface of the insulation. The total thermal resistance R_t is R_{is} plus the usual surface resistance. Once the proportion of R_t to R_i is known, it is quickly apparent what t_s will be, just as with flat surfaces.

Need for Vapor Barrier

All the foregoing is based on the insulation retaining its insulating value. Vapor barriers have become a somewhat controversial subject. There can be no doubt that there are conditions where they are necessary, but there are certainly others where they are not. The tendency of moisture in the air to diffuse toward areas of lower temperature is not questioned but until the insulated surface is below the dewpoint of the surrounding air it makes no difference.

There is evidence that if the system operates intermittently, let us say 10 hours on and 14 off, the surface insulated can be several

degrees below the dewpoint without any trouble developing.

It is easier for me to recognize that moisture will diffuse into the insulation, because there is a colder temperature and hence lower vapor pressure next to the cold metal, than it is to understand how it gets back out. But under some conditions and to some extent it does. With materials having some of the characteristics of a blotter such as sheets of corrugated asbestos paper, it is easy to picture capillary removing condensation from the inner surface. Something similar takes place in fibrous materials which do not show much capillarity by ordinary tests.

Depends on Humidity

This particular form of hygroscopic action is not very clearly understood but seems to depend on relative humidity, rather than on vapor pressure or specific humidity as does diffusion. It may therefore operate to cause moisture travel in the opposite direction to the diffusive action or less frequently in the same direction.

We are at present carrying on some experiments to check observations which indicated that the density of fibrous material is a factor of importance. We have noted that under severe service conditions a lightweight fibrous blanket type of insulation will get wet and drip much more quickly than will a heavy block of essentially the same constituents.

My own opinion is that it is not density per se which is important but rather the structure, specifically the number, size, and relation of the spaces between the fibers. If the latter is true, there are other factors, the quantity, type, and distribution of the binder.

What Is a Barrier?

One of the reasons vapor barriers are controversial is that there are a number of opinions on what is a barrier. For residence insulation it has been generally considered sufficient resistance if the permeability of a barrier did not exceed 1 grain of moisture per square foot per hour with a vapor pressure differential of 1 in. of mercury.

One inch of mercury is a larger vapor pressure differential than is likely to be encountered except occasionally and for short periods. One-half inch is nearer the average for unconditioned air surrounding an insulated part of an air conditioning system. Even so, a barrier with a permeability of 1 is not a good barrier.

We should conclude that if any barrier is needed, its permeability should not be over 0.2 grains, etc., and preferably a maximum of 0.10 grains. With a v.p.d. of 0.5 in. Hg, a permeability of 0.2 and a solid

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Dura-maroon Housing and Silver Stroke Wheel. Interchangeable with Viking Blowers now being installed.

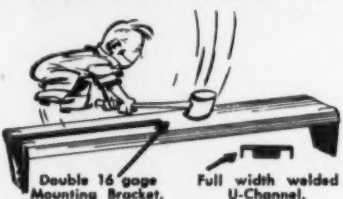
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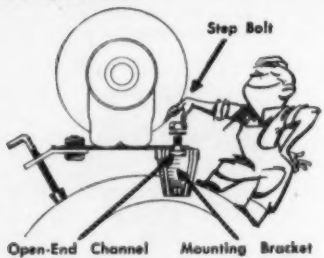
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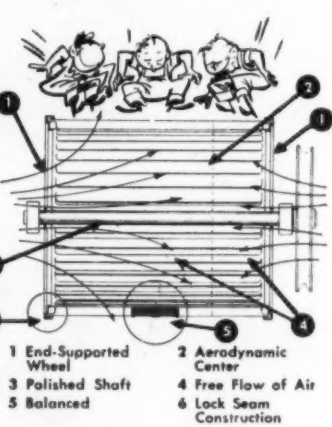
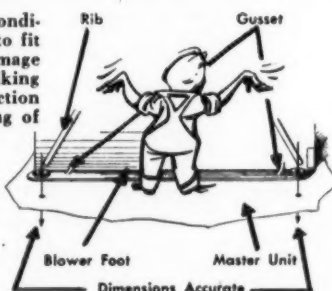
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"When I install a furnace or air conditioner I expect the various parts to fit quickly into place and resist damage during our assembly operation. This new Viking Blower Assembly is the closest thing to perfection along these lines I've ever seen. No reworking of holes in the master unit with these accurate mounting holes. And the strength of the feet eliminate handling damage. I'm sure manufacturers know our problems and I hope they recognize this new Viking Blower as the solution." That's what Wes Solberg of Weichert Heating & Sheet Metal Works in Chicago, Illinois, said when he saw this new Viking Unit.

"Yes Sir, these new improvements in your Blower Wheel look to us like the last word in filling wholesaler, dealer and customer demands. Ought to produce the maximum air flow for its size and cost. It's definitely a strong wheel structurally. Together your improvements show a quieter, longer-lasting wheel unit. Adds many reasons for preference by dealers who are already partial to Viking Blower Packages and Assemblies." So reports Charley Bennett of Armstrong Heating Supply Co., in Chicago, Illinois.

Note to Furnace & Air Conditioning Designers: A request on your company stationery to Viking at the address listed below brings quick delivery of our Blower Assembly Workbook for specifying the blower you require for your unit. Ask for "Viking Blower Assembly Workbook".



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Air Conditioning
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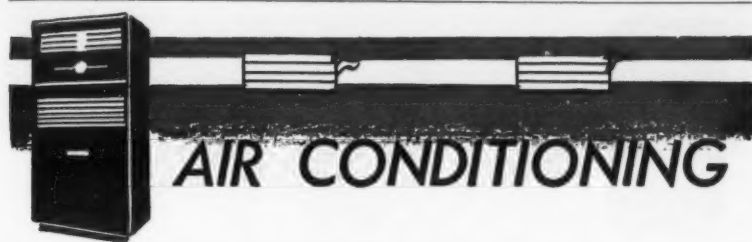


Viking Blower Assemblies



Viking Humidifiers

Other Viking Products:
Dehumidifiers
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Factor of Vapor Barrier Important--

(Concluded from preceding page)
year of 8,760 hours operation, 1 sq. ft. of area will pass 0.125 lbs. of water. Assuming 1 in. thick insulation starting out dry, it will then have in it 2.4% by volume of water.

The real difficulty with vapor barriers is the matter of joints and breaks caused by hangers, pipes, and other projections that pass through the insulation. It is not difficult to get good barriers on plain flat surfaces. There are a number of films and several coatings that will do the job. It is not easy to get tight joints with films, and with either form it is quite difficult to get and keep vapor tightness at hangers and around any interruptions to the barrier. It is possible but it isn't very often done on commercial work.

Table I shows vapor pressure for several temperatures and relative humidity. Table II shows quantities of water vapor passing barriers of various permeabilities.

Avoid Pockets

One thing that was noted in the tests of materials of various densities was that it seemed to be important that insulation be in contact with the surface to be insulated. Where there are pockets between the insulation and the metal, even though small ones, water may collect and increase the chance of drip. This applies regardless of whether the moisture entry was by diffusion through the material or through joints not made thoroughly tight. A degree of ability to conform to the surface which is very rarely a true plane is most desirable.

The type of insulation to use, soft blanket or semi-rigid sheet, depends upon location and the service conditions. Where neither condensation nor appearance are considered to be problems, I believe the blanket-type material is suitable and if there is a saving in cost, its use is indicated.

Exposed areas practically require a rigid or at least semi-rigid and reasonably firm material. It is almost impossible to do a job that looks like anything with a floppy blanket type and if the condensation problem is a consideration the denser types show up

better as stated. I believe also that they are as easy to seal effectively anytime and usually easier.

Methods of attachment vary somewhat with the type of material. I have no very great faith in adhesives alone to hold anything, but there is no doubt that blanket types of reasonable tensile strength applied in the wrap around method can be secured with adhesives. Because of the desirability of having the insulation in contact with surface at all points it is better to use a full flow of cement than to spot or strip it. A little more adhesive is used but not much more time and the result is better.

The semi-rigid sheets on vertical or the underside of horizontal surfaces should have mechanical fastening. That can be used alone or in conjunction with an adhesive, and may take several forms. Probably the best is the use of thin pins welded to the metal over which the insulation is impaled and held by speed nuts or clips. The same pins will serve to hold the wire reinforcing if the surface is to be plastered.

Equally effective though not quite so easy to use are blind rivet pins installed from the outside which are set by pulling the head into a hollow shank which is expanded into the hole that has been drilled in the metal. Sheet metal screws with caps under the heads are effective but many engineers will not tolerate them. They do add to duct leakage and the points inside catch dust and lint, and make difficult or impossible the cleaning of surfaces that can be reached.

Problems with Anchors

The spindle-type anchor, with the base adhered to the metal surface, has been used quite widely. There seem to be two objections aside from the fact that complete reliance is placed on the permanence of the adhesive. They have to be installed as a separate operation to give the cement time to set. This may entail extra moving of scaffolding and it often turns out when the insulation is about to be applied that more than a few of the anchors are not where they are wanted.

The second objection is brought

up by the fact that in quite a number of instances the metal surface will be cold in summer and hot in winter. We have yet to see an adhesive we think is reliable for this condition.

Straps or wiring can be used on ducts but neither makes for a good looking job and the tendency to sag on horizontal runs is unsatisfactory.

Fireproofness Desirable

Fireproofness is always desirable but its importance varies. No material that will carry fire through a wall from one room to another should be used, nor should any be considered acceptable that contributes to a fire. Insulation that is confined within one room need only meet the latter requirement for if a fire of any size occurs the fate of the insulation is a very minor matter.

Insulation placed within ducts or plenum chambers must of course not burn and must not give off smoke or fumes if fire should get to it.

Insulating the inside of ducts avoids the vapor barrier problem but raises some others. The material must not dust and must have as smooth a surface as possible. At best it will provide a surface with a higher friction coefficient than metal. This method requires larger ducts and poses problems at bends and take-offs. In some areas it may also involve jurisdictional problems.

Table I—Vapor Pressures for Various Relative Humidities

Air Dry Bulb deg. F.	Vapor Pressure In Inches of Mercury				
	Sat.	80%	60%	40%	20%
100	1.9316	1.5453	1.1590	0.7726	0.3863
90	1.4211	1.1369	0.8527	0.5684	0.2842
80	1.0316	0.8253	0.6190	0.4126	0.2063
70	0.7387	0.5909	0.4432	0.2955	0.1477
60	0.5214	0.4171	0.3128	0.2086	0.1043
50	0.3624	0.2899	0.2175	0.1450	0.0725
40	0.2478	0.1982	0.1487	0.0991	0.0496
30	0.1645	0.1316	0.0987	0.0658	0.0329

Table II—Amount of Moisture In lbs./sq. ft. Passing Various Vapor Barriers

Vapor Pressure Diff. In. Hg.	Barrier = 1.0 perm		Barrier = .2 perm		Barrier = .1 perm	
	5,000 hrs.	24 hrs.	5,000 hrs.	24 hrs.	5,000 hrs.	24 hrs.
1.0	0.712	0.0034	0.1428	0.0007	0.0714	0.0004
0.5	0.357	0.0017	0.0714	0.0003	0.0357	0.0002
0.2	0.143	0.0007	0.0286	0.0001+	0.0143	0.0001

(1 Perm = permeability of 1 gram of moisture per sq. ft. per hr. with vapor pressure difference of 1 in. of mercury.)

New Ala. Hosiery Plant To Be Air Conditioned

SCOTTSBORO, Ala.—At a cost of \$1,250,000, North Carolina's Burlington Mills Corp. will build an air conditioned plant here for the manufacture of women's seamless nylon hose.

John W. Harden, vice president, said the first building will contain 32,000 sq. ft. of floor space, with two other similar units planned. Of concrete, steel, and masonry construction, the buildings will be air conditioned.

Minton Named Chief Design Engineer of Arrow Utilities

BROOKLYN — Arrow Utilities, designed air conditioning specialists, recently announced the appointment of Joseph Minton, B.M.E., as chief design engineer.

Minton was formerly with the S. J. O'Brien Sales Corp. He is a graduate of the School of Engineering of the City College of New York.

This is the second recent appointment made by Arrow Utilities, which is expanding its personnel.

ANNOUNCING



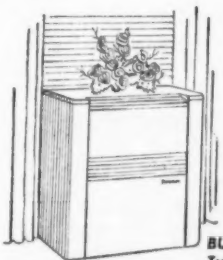
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Heat Pumps Unlimited

Factories, Commercial Buildings Waste Heat and Cooling Water
That Could Be Used To Cut Fuel Bill, Canadian RSES Hears

TORONTO, Ont., Can.—"There is nothing mysterious to the refrigeration service engineer about heat pumps," J. F. Townsend, contract engineer for the John Inglis Co., Ltd. here, declared at the recent annual convention of the Refrigeration Service Engineers Society of Canada.

"If you know how a refrigeration unit works and why, then you have not only the know-how, but you're the natural people to sell heat pumps," he asserted.

Here's why:

"Your business takes you into commercial establishments and factories every day. Every exhaust ventilator is blowing away expensive heat that might just as well be used indoors to cut down the fuel bill. Every machine that wastes cooling water is also wasting heat that may be reclaimed.

"Not every such case you spot is going to turn out to be a sale. But there are lots that will.

"I want to emphasize that the type of job I'm thinking of is not a Rube Goldberg invention. Take my advice and stay away from hooking up diesel engines to ice machines. If it uses an exhaust air duct as its heat pick-up source,

then a standard D. E. coil and hook-up does the trick."

Good heat pumps, Townsend pointed out, can be made from standard refrigeration equipment: direct expansion coils, valves, compressors, and controls.

JOBS SAVE MONEY FOR CUSTOMER

"The type of job I'm suggesting not only saves money for the customer on his heating bill—otherwise he won't buy it—it's a straight forward refrigeration installation that makes money. . . ."

Townsend told the refrigeration service engineers that a heat pump differs from a standard piece of refrigeration equipment only in the purpose it serves. The emphasis is on the condenser, he said.

"Put it this way," he smiled, "any refrigerating machine that sees the light and decides to do something with the hot side besides running up a water bill becomes a heat pump."

Explaining how a heat pump works, Townsend noted that "heat energy always flows down the temperature scale, unless some extra effort is added to make it do otherwise."

This, he said, is standard refrigeration theory, and added: "More heat energy comes out in the condenser than goes into the evaporator because the shaft-work of compression reappears in the discharge gas as heat energy. That is the part the owner pays for on his electric bill. It accounts for about one-fifth of the total amount of heat discarded by the condenser.

"Now suppose we're using an air-cooled unit on (a walk-in) box. Suppose the unit is in a small closed room. Everybody knows that the room gets hot.

"So, if you happen to want to keep the room warm, you have a heat pump. It's not a good heat pump, because units cooling a box don't run continuously, or even regularly. You couldn't depend on it to keep the room at an even temperature.

"Obviously, the first requirement for a heat pump is something that can be chilled for as long as you want heat, without getting much colder."

Townsend pointed out that there are three sources of heat: water, ground, and air. If a water source is available, all that is needed is a water chiller installation, with a



5-hp. unit handling a fair size house very nicely.

But when water is not available, he said, "we're right beside the scientific people trying to figure out a cheap and simple residential heat pump."

He cited a University of Toronto report describing a heat pump in Toronto which uses the earth for a heat source.

"A grid system of pipes is buried in a citizen's front and back yard out west of the city. These are 900 ft. of 3/4-in. o.d. copper tubing buried 5 ft. deep in three separate circuits for experimental purposes.

"Anti-freeze is chilled by a 3-hp. 'Freon' unit, then pumped out through the ground coil. The anti-freeze comes back a few degrees warmer. The ground is about freezing temperature, but if the anti-freeze goes out at about zero, it still gets warmed up a bit.

"Inside the house it's a fairly straight forward refrigeration job with an air-cooled condenser. A regular forced air duct system circulates air through the house. The air does two things. It keeps the house warm and it keeps the head pressure down.

"Air to air heat pumps are getting fairly popular in the more southerly states," he said, "where outside air, even in winter, doesn't get too cold.

"In this country, just when you need the heat most, the air outside is already well chilled. There is a point when it costs too much in horsepower to make a heat pump worthwhile.

CAUTION ON AIR TO AIR HEAT PUMP JOBS

"Don't sell any air to air heat pumps in Ontario on a money-back guarantee," he advised. "But don't write off the air as a source as being utterly impractical.

"Most people think of a heat pump as a machine for heating the house. And most people in our business think of it in terms of a 3 or 5-hp. unit with a lot of valves and extra lines that should be leak-tested twice a day.

"Heat pumps of different kinds are used for various purposes.

"For example, suppose you couldn't use a coil in the ground because you lived in northern Quebec where there is nothing but rock. With the outside air at -40° F., an air handling evaporator as a heat source doesn't seem very practical.

"There are lots of small and medium lakes. The joker in a water chilled job is that the water (under 6 ft. of ice) is already down to the 32° F. freezing point. The only thing you can do with the water is freeze it.

"So why not put in a scale-ice machine? The kind that makes ice like corn-flakes. For every pound of ice you make, your unit has to pull out 144 B.t.u. of latent heat of fusion. A machine that makes about 300 lbs. of ice per hour will heat your house nicely.

DIESEL ENGINE USED

"Such a machine has been built and tested. This machine was driven by a diesel engine. The whole works looks a bit complicated. But it does deliver twice as much heat per gallon of fuel as can be got out of that fuel in the most efficient oil burner.

"If the fuel comes by air or dog-team, the saving merits serious consideration. Another point is the lack of fire hazard. But maintenance—that's a serviceman's nightmare!

"A more simple variation is a heat pump system using two Merlin aircraft engines, 350 hp. each.

This job was designed to heat the Royal Festival Hall in London and also provide summer cooling.

"The heat source is 1,800 g.p.m. of water from the river Thames, pumped through the evaporator. The exhaust gas heat from the engines is also recovered. For the 700 hp. input, this plant delivers about 9,000,000 B.t.u. per hour.

"Any list of heat pumps now working on this continent should include the installation at the H. B. Beal Technical and Commercial High School in London, Ont.

BIGGEST JOB IN CANADA

"This is the biggest heat pump in Canada to my knowledge. It is a 75-hp. job. It's an air to air water job, the only one of its kind that I know of.

"It was installed for the board of education of London by the John Inglis Co. Ltd. about two years ago. . . . This heat pump is a real work horse. Its main chore is to keep about 3,000 gals. of water hot for showers (for both before and after classes).

"The heat source is a natural here. In a school the size of Beal Tech a lot of air is exhausted for ventilation. So standard D.E. cooling coils were installed in the exhaust ducts. Now the air is exhausted cold instead of warm. After all, that air is heated in the first place by oil-fired boilers.

"So the heat reclaimed by the heat pump is put in the water simply by circulating it through the standard condenser.

"They have a big cafeteria in the basement. It's air conditioned in summer. That's the job of the heat pump, too. The heat from the cafeteria goes into hot water for more showers.

"The swimming pool is used all summer when the rest of the school is closed and, of course, the ventilating system isn't going. For this time of year another D.E. cooling coil and fan is mounted on the roof in a penthouse plenum chamber. So the warm summer breezes are robbed of their heat.

HEAT PUMP SAVED PURCHASE OF AUXILIARY BOILER

"This outside air pickup with the heat pump saved the board of education the cost of an auxiliary boiler for summer use.

"Incidentally, the heat from any of the sources, ventilation air, cafeteria air conditioning, or outside roof air, can be switched over to heat the swimming pool water when it comes in first from the mains, otherwise it's automatic. . . .

"For the last two winters the University of Western Ontario has been experimenting with the cooling coil on the roof (intended for warm summer air) to try out Ontario winter air as a heat source. Dr. Misener, head of the department of physics, claims it works well and data is being gathered.

"In Europe, especially Switzerland, heat pump design is far ahead of this country. Food products, especially milk, were concentrated years ago with a 'thermo compressor.' This is a heat pump application in which the refrigerant compressed is the vapor or steam evaporated from the product, such as milk, then recondensed in coils submerged in the milk.

"Actually, when you think of a heat pump," Townsend concluded, "you think first of where and when the heat is required. Then you look for something that can be cooled for as long as you want heat.

"Alternatively, if you see a lot of heat going to waste, there may be gold in it if you can find a customer or a use for the heat. Then you have an idea to sell a refrigeration system."

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in product and profit!



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TO AVERAGE HOME AND BUSINESS OWNERS—

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with new or old forced warm air systems to utilize the same duct work.

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SLANTS ON SERVICE

Use of 95-5 Solder In Low Temperature

Alpha Metals, Inc.
Jersey City, N. J.

Editor:

In the Jan. 11 issue of your magazine under "Slants on Service" reference was made to the fact that 95% tin and 5% antimony solders should not be used for low temperature lines due to the fact that the tin would powder.

Ninety-five per cent tin and 5% antimony has been sold by us to the refrigeration trade for a goodly number of years and in pretty large quantity and we have received a call from one of our large distributors, Melchior, Armstrong and Dessau, who are concerned as to whether or not they should continue to supply this solder to their trade.

My purpose in writing to you is to establish the basis upon which this article was written and possibly offer, if we may, some assistance to your organization in determining whether or not it is correct.

The writer presumes that the article or note was written concerning the so called "tin pest" under which pure laboratory tin at extremely low temperatures turns from a solid to a powder form. However, the slight addition of 0.5% antimony, lead, or bismuth renders this situation impossible.

The writer quotes from "Notes on Soldering" published by the Tin Research Institute as follows:

"Instances have been recorded of pure tin having crumbled into a gray powder in countries where extremely cold temperatures occur and it has been established that this 'tin pest' or 'disease' is the manifestation of a change of crystal form. In view of the increasing opportunities in modern times for products to be exposed to extreme cold, in, for example, stratosphere flying and refrigeration, the question has been raised whether or not there is risk to tin solders from this cause.

"There is no such risk because the phenomenon is peculiar to unalloyed tin or to tin contaminated by aluminum or zinc. The 'disease' does not occur in tin which contains over 0.5% antimony or only 0.1% of bismuth, nor in alloys containing 5% or more of lead.

"In the few instances where soldering is done with pure tin and there is risk of exposure to

very low temperatures, it is advisable to specify that the tin used as solder should have an antimony content of not less than 0.5%. On copper and brass surfaces, the dissolving action of the pure tin solder is rapid and there will usually be ample copper dissolved in the tin to inhibit the change."

From the foregoing information which certainly comes from a reliable source, we are certain that you will undoubtedly wish to retract the statement in the Jan. 11 issue and possibly print the above information to clarify the situation.

However, if you have any other information which is contra to that which we have supplied, we would indeed appreciate knowing of it though we feel that the information we have given is correct.

MARTIN A. BOYLE,
Field Manager

'95-5' Solder May Not Have Antimony In It

Editor's Note: The original source of the item referred to in the preceding letter was J. H. Spence, service manager of Hussmann Refrigeration, Inc., who comments as follows:

Hussmann Refrigeration, Inc.
St. Louis

Editor:

Fifteen to 20 years ago, various types of tin solder were used extensively for soldering return bends on coils and for making joints on remote commercial installations, and during that period the industry experienced a high percentage of leaks at the joints. Because of this experience with leaks, most installation people started using silfos or one of the silver alloy brazing compounds, and there was a vast reduction in the number of leaks in joints on remotely installed equipment.

During the past 10 years, in my travels over the country, I have had individual servicemen tell me that upon attempting to use what they refer to as 95-5, they had more trouble with leaks than they did when they used silfos or the other silver alloy brazing compounds.

Consequently, as a result of years of practical field experience, one does develop certain reactions and feels inclined to make recommendations based on the experience of the manufacturing company that one is with, as well as information picked up from individuals in the field.

Another outstanding reason that I have recommended against the use of the so-called 95-5 solder is due to the fact that I am afraid that if one states generally that it is satisfactory to use 95-5 solder for joints (and when you state that it is satisfactory you have in mind that a man will ask for 95% tin and 5% antimony solder) that he will carelessly ask his supplier for 95-5 solder, without specifying that he wants the grade that has 5% antimony in it.

Because of the dangers of the serviceman asking for a specific type of 95-5 solder and because it is my opinion that wholesalers generally may not be too careful to determine what the refrigeration man is going to use the 95-5 solder for, he might be inclined to give him the type of hard solder that doesn't contain the required 5% antimony.

According to subsequent investigation, and according to the Tin Research Institute, 95-5 solder that consists of 95% tin and 5% antimony is satisfactory for liquid and suction line installations, including low temperature. I would be inclined to concur.

J. H. SPENCE,
Service Manager

Tubing Installation for Ford Aircraft Division

No Cooling on This Job, But Refrigeration Firm's Knowledge Came In Handy

CHICAGO—Some skills developed in the art of refrigeration and air conditioning can be profitably applied in other fields, believes George T. Howe, president of Accurate Heating and Cooling Corp., contracting firm here.

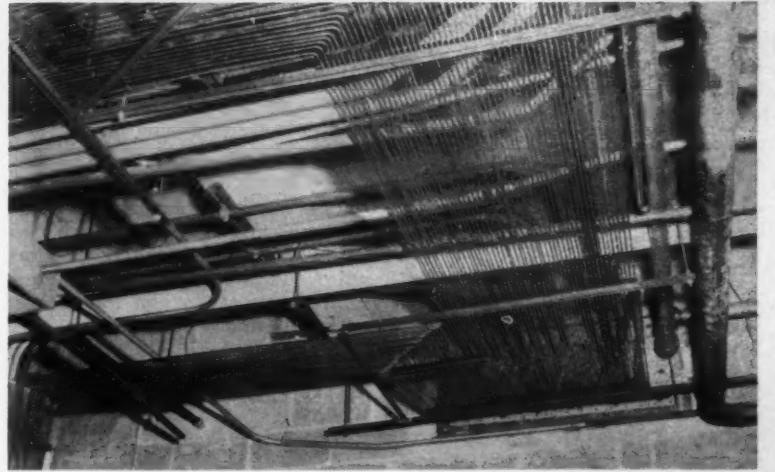
As a prime example he cites an installation made by his company for the Aircraft Engine Div. of Ford Motor Co. in its huge Chicago plant.

This job was neither refrigeration or air conditioning, but consisted of installing the instrumentation for a jet engine test cell.

Involved was the mounting of large panels filled with Brown instruments and running of 1/4-in. hard copper tubing between the indicating instruments on the panel and pick-up points in the cell proper.

"Years of experience in the installation of tubing made this job seem like a natural to us," Howe comments.

The accompanying photograph shows the neat and accurate work required on an installation of this type.



NEAT AND ACCURATE work was necessary in the installation of this tubing in the Aircraft Engine Div. of Ford Co. Close examination shows that there are no soldered or brazed joints.

Close examination of the photo reveals further that there are no soldered or brazed joints in the installation.

Several years ago, Howe says, he started experimenting with bending of hard copper tubing to eliminate, if possible, elbow fittings.

"Any joint in a line is always a possible source of leaks," he contends, "even with the best of soldering or brazing. By eliminat-

ing such joints, potential leaks are prevented."

A special Holsclaw tube bender is employed. The bender is essentially the same in appearance as this company's conventional bender, but wearing parts are made of harder steel to permit use with hard copper tubing, Howe explains.

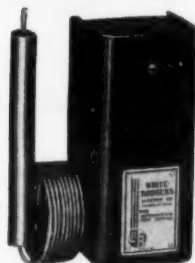
Hard copper tube sizes up to 1 1/8 in. and sometimes larger can be successfully bent this way, he adds.



Sid says:
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... to a fraction of an inch!*

This exceptional control has been developed for use on refrigerated cabinets such as milk coolers and cold drink dispensers where an ice bank is built up as a means of storing refrigeration.

Operating on a new principle... maintaining ice bank by thickness, rather than temperature, this control keeps ice bank ready at all times for peak loads.



Available with
5 Ft. or 7 Ft.
Capillary Length

Thickness-Sensitive Bulb—

Desired thickness of ice bank is determined by location of sensitive bulb in relation to evaporator coils. Control starts the compressor the instant the bulb is exposed to water, stops it when again sealed in ice.

No Over-freezing—

Prevents over-freezing with resultant blocking of water flow and possible ruptured or distorted cabinet seams and walls.

High Electrical Rating—

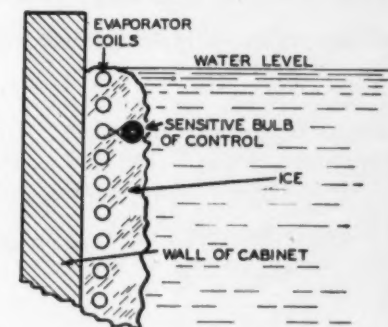
13 Amps. at 115v. A rugged and dependable snap-action line voltage control.

Exceptionally Accurate—

This control, operated through the same positive Hydraulic-Action principle that has distinguished other White-Rodgers controls for so many years, controls thickness of ice bank to an accuracy of 1/16 of an inch.

Side View—

The sketch below illustrates placement of the sensitive bulb in relation to evaporator coils and outer edge of ice bank desired. Cabinet here is type having ice bank built-up around inside of the walls.



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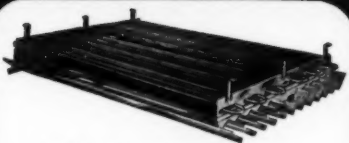
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Current Literature

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

Chart Tells What Type of Stainless Steel To Use

KEY NO. P-340

PITTSBURGH—A new slide rule-like chart which tells what type of stainless steel should be used for about 95% of operations requiring stainless is being distributed by Crucible Steel Co. of America.

The stainless steel selection method covered by the chart was developed by Hugo Becker, assistant product manager for Crucible's tool steel products. He designed a similar chart for the selection of tool steels in April, 1950.

Becker's chart grew out of Crucible's findings that most stainless steel working failures and losses result from wrong selection of stainless steels. Use of the chart approaches the problem in much the same way as a metallurgical engineer would.

The front contains a comparison of stainless physical and mechanical properties, and elevated temperature properties. The reverse side gives a large number of the

important characteristics of stainless.

The company commented that the chart cannot be designed to cover all cases. The rarer jobs require the special knowledge of a competent metallurgist for specific advice, it said.

New Cord Sets Catalog Issued by Cords Limited

KEY NO. P-341

DE KALB, Ill.—A new 30-page, two-color catalog was recently issued by The Cords Limited Div. of the Essex Wire Corp. to cover both its comprehensive wire cordage types and cord set components.

The catalog contains 64 photographs of facilities and some typical production cord sets. A special engineering section contains 118 separate dimensional engineering drawings of Cords Ltd. plastic and molded rubber cord connectors, strain reliefs, crochets, and caskets.

There are also simplified tables showing maximum ampere and voltage ratings for various portable cordage and wire gauges.

Gould Solenoid Valves Described In Bulletin

KEY NO. P-342

INDIANAPOLIS—A new four-page bulletin, 500A, on solenoid valves and their applications, is available from the J. D. Gould Co.

The bulletin illustrates and describes the complete line of solenoid valves made by Gould for automatic or remote control of steam, air, gas, or liquid flow.

Described in the new bulletin are 25 types of solenoid valves, with details on their applications, operation, specifications, design, construction, and prices.

The various models range in size from 1/4 in. to 3 in., and handle pressures up to 1,200 p.s.i. (steam to 150 p.s.i.). A wide selection of assemblies and coils adapt the valves for practically any use.

Also described in the bulletin are the waterproof and oilproof solenoid coils which are guaranteed for one year to withstand temperatures up to 450° F.

Titus Catalog Describes Perimeter Diffuser

KEY NO. P-343

WATERLOO, Iowa—A new catalog on its high efficiency perimeter diffuser has been issued recently by Titus Inc. here.

The catalog outlines the various features of the diffuser, provides engineering data and test results, and outlines installation steps.

'Air-O-Motor' Operators Described In M-H Bulletin

KEY NO. P-344

PHILADELPHIA—A new line of "Air-O-Motor" operators of both spring and springless types is described in Bulletin 414-1 issued recently by the Industrial Div. of Minneapolis-Honeywell Regulator Co. here.

Many illustrations, specifications, and operating tables are included in the eight-page bulletin.

Catalog Describes Deming Water Systems, Pumps

KEY NO. P-345

SALEM, Ohio—A new 96-page "Commercial Catalog C-54" published by The Deming Co. here, gives comprehensive data, construction details, and selection tables on 12 types of Deming water systems.

These include the latest dual-purpose jet pumps (convertible for shallow or deep well service) and the submersible type of deep well pump.

The new Deming "Motor-Mount" centrifugal pump designed primarily for air conditioning service but applicable for booster service, general circulating service, swimming pools, lawn sprinkling, and industrial plant service, is also featured.

Other units include Deming side suction centrifugal pumps of small capacities, standard "Motor-Mount" centrifugal pumps in both vertical and horizontal types, condensation return units, cellar drainers and sump pumps, portable self-priming centrifugal pumps for drainage or water handling jobs, and other types of pumps and accessories.

Portfolio To Aid Home Air Conditioning Salesmen

KEY NO. P-346

LOS ANGELES—An air conditioning sales portfolio for house-to-house salesmen is being introduced by the National Sales Institute here.

The portfolio is intended to serve as a visual presentation of consumer benefits from home air conditioning, such as health, cleanliness, and economy. Even some aspects of home furnishings arrangements are covered. Full-color illustrations emphasize various points.

The 30-page portfolio, with each page enclosed in cellulose page protectors, is packaged in a zipper briefcase. It will sell for \$17.50 each. A guide to use of the portfolio by air conditioning salesmen is included.

"to keep your customers serene...
ya gotta keep their filters clean"

**NOW... a doubled
market offers you
greater profits with**

OWENS-CORNING
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DUST STOP
AIR FILTERS



1. They are the leading original equipment filters . . . the preferred replacement choice.
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With the number of air conditioning units in use having doubled during the past year . . . and about to double again . . . service is becoming big business!

What's more, it's service that makes or breaks brand reputations. Service can help or hinder future unit sales.

So if you want to really cash in on the opportunities offered by the vastly expanded air conditioning market, stock and push nationally advertised Fiberglas Dust-Stop Air Filters.

As Arthur Godfrey will say in launching the Fiberglas Dust-Stop selling season on March 26th, no air conditioner can do a good job unless dirt-

clogged filters are replaced regularly. Fiberglas Dust-Stop Filters combine high efficiency with long life. They trap virtually all common dirt with *minimum* air resistance. A special non-drying adhesive gives them lasting dirt-catching capacity.

To help you sell Fiberglas Dust-Stops and air conditioning service, we've prepared a red hot promotion. FIRST, we're telling your customers about the need for frequent filter replacement with ads in TIME and leading newspapers across the country. SECOND, we've a host of free selling aids, including a special Reminder Service Plan, available to help you follow up and get the business. Your supplier will soon give you details.

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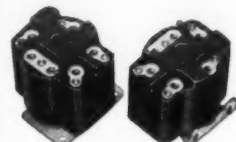
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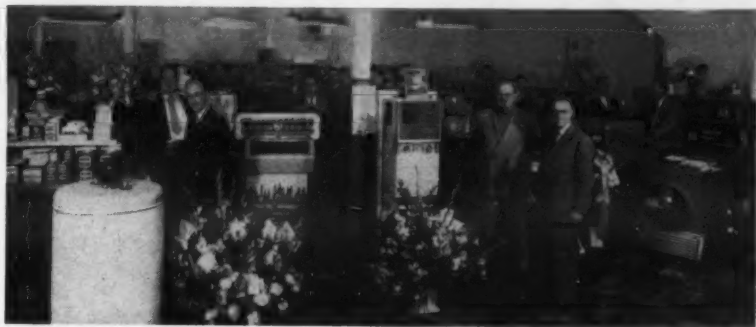
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BOOST IN FLOOR TRAFFIC and virtual elimination of the one item ticket are among the advantages resulting from the self-service type of operation recently adopted by Refrigeration Supplies, Inc. of St. Louis. The picture is of a group who attended the firm's recent open house.

'Fifth In the Country'

Refrigeration Supplies of St. Louis Expects 25% More Business with Self-Service In New Bldg.

ST. LOUIS—By moving to a new building with increased floor space and improved handling facilities and by instituting a self-service type operation, Refrigeration Supplies, Inc. here expects to increase its gross business by 25% this year with the same personnel, J. F. Brazier, vice president and general manager of the firm announced recently.

FIFTH WHOLESALER TO GO SELF-SERVICE

Brazier claims that this is now the fifth refrigeration parts and supplies business to be conducted on a self-service basis.

The company's new location is at 5172 Easton Ave., just east of Union Ave. The building was formerly occupied by a toy manufacturer. It contains 13,000 sq. ft. of floor space in two stories plus basement. A 2,500-sq. ft. warehouse and loading dock and parking space is at the rear.

Grand opening of the new facilities was held in mid-January and nearly 500 contractors and servicemen turned out, Brazier said.

Brazier explained that Refrigeration Supplies, Inc. tried out the self-service system on a limited scale in 1953 and found it was able to handle a 15% increase in gross business without any increase in store personnel. That led to the present move, he said.

EMPLOYEES REPORT LESS WORK INVOLVED

Describing the operation, he said, "Our store employees report that it is less work waiting on a customer under this system because he usually has most of the items he wants before he requires any of their time. In most cases, all they have to do is write out the billing.

"Our new store is set up about 80% self-service and 20% equipment display. All items of a small nature such as valves, controls, dehydrators, flare fittings, pipe fittings, soft copper tubing, tape, solder, hand tools, pipe wrenches, time controls, and all refrigeration accessories are stocked for self service on regular grocery store type island and wall shelving.

"Our check out counter is located at the rear of the building because our parking and loading facilities are in the rear and 90% of our trade will enter and leave by the rear doors.

"Our check out counter is a 24-ft. long "L" shaped counter with steel pigeon holes on both sides holding all our flare and sweat fittings. The floor men work on both sides of this counter helping the customer with catalog information and writing invoices for the mer-

chandise they have selected from the floor.

"If they require a piece of equipment, such as a room cooler, residential air conditioner, condensing unit, blower coil, water heater, furnace, or attic fan, they select the one they want from the floor samples and the floor man invoices it to them. Then they pick it up from the warehouseman at the loading dock.

"We have noticed a marked increase in our store traffic under this system and have noticed a complete lack of the one item ticket. This indicates to us that the serviceman who stops in for an emergency valve or control always sees other items he is in need of and will usually pick them up for his truck stock while he is here.

"We have requested comment from our trade on this system and it has all been favorable. The contractors all say that in most cases their servicemen do not spend as much time waiting for a counter man to get them the items they need and that they would rather roam the store and pick out the

material they want. Another feature the contractors like is our large display floor.

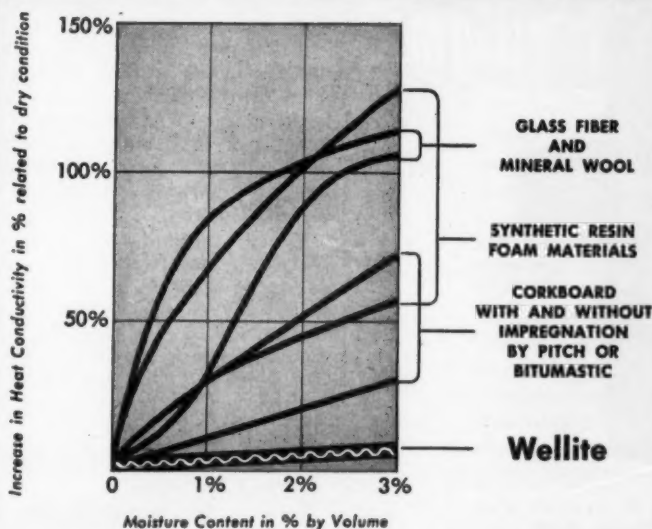
"Our trade is composed mostly of small independent contractors and servicemen who do not have the facilities to properly display large equipment. We invite them all to use our floor as their own to show their prospective customers various pieces of equipment we have on display. Our floor men are all instructed to give them as much help as possible in selling the prospective customer.

"We were very favorably impressed at our open house by the comments of our customers and they were very much surprised at the great number of different items we stocked. We had always stocked these items, but they were never out where the servicemen could see them."

Other officers of Refrigeration Supplies, Inc. are J. W. Cavataio, president; and Elmer Lusk, treasurer. The company also has offices and a store in E. St. Louis, where it is known as the Illinois Electric Works, Inc.

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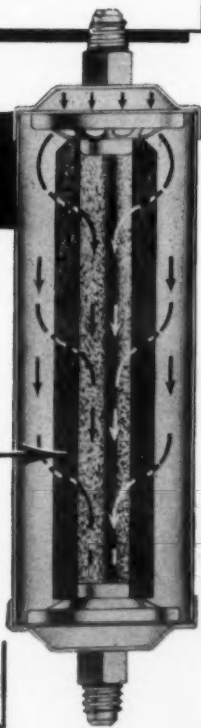
Eliminate trouble by installing a high-capacity "Permaclean" Filter on the liquid line ahead of the drier to run-in new units—to clean up established systems—and for permanent service to prevent future troubles and expensive cleansing jobs. Costs but a few dollars to save callbacks, equipment and merchandise.

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'Dairy Merchandiser' Has Fiberglass Base

AZUSA, Calif.—A white opaque lid with merchandising superstructure for ice cream and frozen food cabinets has been announced by R. K. Merritt & Associates here.

The "Dairy Merchandiser," as the lid is called, is made in 12 different models and sizes for cabinets ranging from four-hole to 12-hole sizes. The superstructure has a fiberglass base.

'Auto-Supermarket'

Day May Come When Shoppers Can Buy Staple Items from Vendors Without Leaving Cars

LA HABRA, Calif.—A realty company is said to be considering building a supermarket in which motorists could purchase some staple items from coin-operated vending machines without getting out of their cars.

Refrigerated vending-type machines would also dispense meats and produce. However, customers would have to park their autos to buy these items.

Albert W. Riise of Azusa, Calif., who designed the proposed "automart," said it could handle about 120 cars every 15 minutes. Each side of the self-service market would be the same for traffic coming from either direction.

The building would be constructed on large hollow pillars which would serve as dispensers for certain staple, canned items. Customers could get change from a cashier or from coin-changing machines.

Survey Discovers Factors In Success of Self-Service Poultry Merchandising

SELBYVILLE, Del.—Fresh and frozen poultry should be packaged to meet the requirements of self-service selling, or it will lose out to other food products in the intense competition for the consumer's food dollar, the Delaware Poultry Commission was told here recently.

Addressing a meeting of the commission, held in cooperation with the University of Delaware and attended by poultrymen from the Del-Mar-Va peninsula, D. D. Lanning, representing the Du Pont Co.'s Film Dept., said that cleaned, ready-to-cook, poultry attractively prepackaged to catch the shopper's eye is vitally necessary if poultry is to compete successfully in today's modern merchandising system.

With thousands of items to select from, and shopping time at a premium, few women will wait five minutes for a butcher to dress a chicken, he said.

Citing the results of a recent du Pont study on meats as an example of what self-service could do for poultry, he said it was disclosed that self-service meat shoppers purchased more products in half the time it took the same number of shoppers to complete their purchases in service meat departments.

The success of self-service meats, the study pointed out, was largely due to the elimination of the usual traffic bottlenecks in service meat departments—waiting in line for cutting, weighing, wrapping, etc.

Lanning also compared supermarket poultry sales with those of meat. These figures, the result of a spot check, disclosed that out of the total number of shoppers surveyed, 50% bought luncheon meats and 70%, fresh meat. Only 9% of the shoppers, the study reveals, bought fresh poultry, while 1% purchased frozen poultry, and 1/2%, the canned variety.

He said these figures showed the need for improved poultry packaging, since the package has to be its own "salesman" in self-service stores. Poultry packages, he said, have only split seconds to convince the shopper before her hasty glance leaves the display case.

To further emphasize the sales value of good poultry packaging, Lanning quoted from a recent issue of *The Wall Street Journal*, which said that poultry processors "attribute some of their sales success to improved packaging and merchandising."

"They have found that the housewife wants poultry neatly packed so she can see what it looks like . . . she wants it out in the store where she can left various packages to find the right one for her family . . . she wants the

weight . . . and price of the package clearly marked so she can be sure she's getting what she's paying for.

"And she'd like to see the processor's brand name on the package, so she'll know he's standing behind the product," reports one processor. "That's why more and more poultry is being sold under brand names; they were practically unheard of 20 years ago."

Lanning also gave a special showing of the Film Dept.'s award-winning merchandising movie, "The Impulse Payoff," which stresses good retail display techniques.

Du Pont's part of the program was concluded with a talk on the properties of various packaging films by Herbert Nagel, a member of the Film Dept.'s sales development staff.

Eight Distributors Named To Represent Quicfrez

FOND DU LAC, Wis.—Eight new distributors have been named to represent Quicfrez, Inc., producer of refrigerators and freezers, it was announced recently by Harry Ryan, vice president in charge of sales.

These firms will handle the newly-designed 1954 Quicfrez line. The models consist of six freezers, five refrigerators, and a combination refrigerator and freezer set called the "Twins."

The distributors are: Zastro-Goetten Co., Los Angeles; Irwin Distributing Co., Wichita, Kan.; Emmons TV & Appliance Co., Cedarhurst, N. Y.; "Bridge," Plattsburg, N. Y.; H. M. Tower Distributing Co., New Haven, Conn.; Portelco, Portland, Me.; and Consumers Supply Co. at Des Moines and Ottumwa, Iowa.

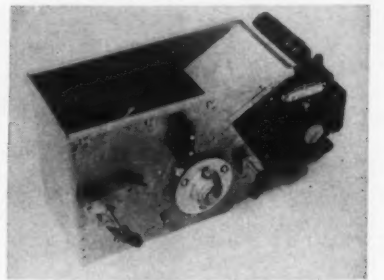
AMA, Utility Sponsor Phoenix Conference April 8

PHOENIX, Ariz.—The local Appliance Merchandisers Association and the Arizona Public Service Co. are co-sponsoring a regional conference of the Pacific Coast Electrical Association in the Westward Ho hotel located here on April 8.

Luncheon speaker for the occasion is W. O. Kyte, manager of advertising and sales promotion for the General Electric Co., Los Angeles.

Conference discussions will cover trends in power, selling methods, light conditioning, and adequate wiring.

Registration is \$2 per person, including the luncheon. A 5 p.m. hospitality hour will be sponsored by AMA.



Ice Crusher Made for Use With Carrier Cube Maker

E. ORANGE, N. J.—A new stainless steel ice crusher designed for use in the Carrier automatic ice cube maker to give the user the choice of crushed ice or whole cubes, has been announced by Franklin P. Miller & Son, Inc. here, the manufacturer.

By the turn of a knob, fine or coarse crushed ice can be selected. The machine operates as silently as possible, crushing the ice cubes as fast as made in the ice cube maker, the company said. When whole cubes are needed, the user turns the knob to shut off the crusher. This automatically diverts the cubes to the cube storage bin.

The new ice crusher attaches to the automatic ice cube maker by means of a few screws and can be installed in a matter of minutes. Connecting the motor to the cuber control is the only other step necessary before the machine can be used.

Constructed of 18-8 stainless steel, the ice crusher has a high finish sanitary design. It is ruggedly constructed with heavy duty oil impregnated bearings. The new ice crusher is available at mass production prices direct from the manufacturer.

S. & R. Expands Facilities, Equipment, Production

NEW YORK CITY—S. & R. Soda Fountain Mfg. Co. here has announced that it recently added new equipment and enlarged its premises to increase fountain production.

Bernard Roberts said that S. & R. is also planning to expand production on the covered relish stand and the refrigerated combination sandwich unit.

Hoffman Supply Handles Servel Commercial Units

EVANSVILLE, Ind.—Hoffman Supply Co., Springfield, Mo., has been appointed wholesale supplier of Servel commercial electric condensing units and factory renewal parts in that area, according to John F. Zubrod, product manager of the commercial refrigeration division of Servel, Inc.

Harry G. Hoffman is head of the firm.

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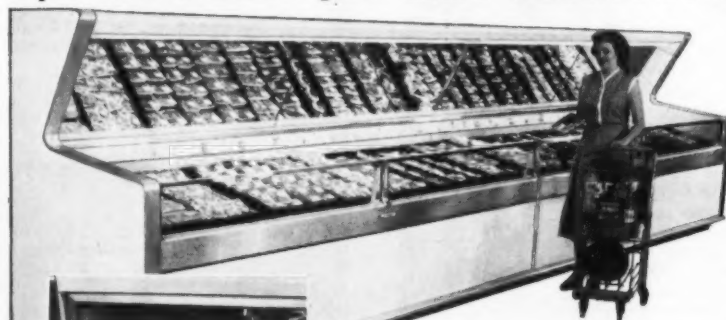
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Ohio State RSES Will Hold 8th Annual Convention In Canton April 2 to 4

CANTON, Ohio—The eighth annual convention of the Buckeye State Association, Refrigeration Service Engineers Society, will be held April 2-4 at the Onesto hotel here, it was announced recently by Carl F. Howenstine, general convention chairman.

A feature of the meeting will be the awarding of the BSA scholarship by Prof. R. D. Landon, dean of the Engineering college of the University of Akron. This will take place during the annual banquet April 3.

Intent of the association, it was explained, is that this scholarship be given to a student of mechanical engineering majoring in refrigeration and air conditioning. The association also desires that the student, when graduated, shall devote at least two years to the refrigeration industry in Ohio.

To be eligible for a scholarship award, the applicant must graduate from an accredited secondary school or its equivalent, and must have a scholastic standing in the upper half of his or her class.

Those who may apply include any high school senior or high school graduate under 25 who is the son or daughter of an association member; also, an employee of a BSA member who shall meet requirements.

Scholarship winners may attend any qualified college or university in Ohio. Value of the scholarship is a maximum of \$500 per scholastic year.

Administered by a BSA scholarship committee, the scholarship program "contemplates that, if satisfactory scholastic standing is maintained, these scholarships will be renewed annually until require-

ments for a degree are fulfilled," according to the association.

Activities scheduled for the first day of the convention (Friday, April 2) include registration at 11 a.m., tour of the Hoover Co. at 1:30 p.m., a business meeting at 8 p.m., and a get-together party at 10 p.m.

After registration at 8 a.m., Saturday's session will start off with a panel discussion at 9 a.m. This will be followed by a talk on residential air conditioning by Lee Miles of Mueller Furnace Co.

Talks will also be given during the morning by Myron D. Miller, executive secretary, Refrigeration Industry Safety Advisory Committee; Mr. Dolan, Ohio State Inspections and Codes; and Conrad Traut, Hoover Co.

Miller and Dolan are to discuss safety and inspection of refrigeration equipment. Traut is to speak on "Uncle Sam and His Relations."

First half-hour of the afternoon will be devoted to discussion and showing of the sound movie "Don't Leave a Death Trap." Next will be a presentation on "Servicing Ice Cubers and Flake Ice Machines" by A. C. Koch and M. J. Lash of York Corp.

Richard Gilmer, Airtemp Div., Chrysler Corp., will then discuss window air conditioners, after which Dan Godella, General Electric Co., and Herb Wynn, Ohio Power Co., will talk on heat pumps.

"Television and Microwaves" will be the subject of the final speaker, Robert C. Clark of Ohio Bell Telephone Co. The annual banquet and floor show will start at 7 p.m.

A business meeting and election of officers Sunday morning will wind up the convention.

Omaha Food Processing, Distribution Firms Plan To Install More Refrigeration In '54

OMAHA, Neb.—Industrial refrigeration installations made in food processing and distributing plants in the Omaha area in 1954 will considerably exceed in value those of the past several years, it is estimated by the Chamber of Commerce. Two major installations for Omaha and another for Central City, Neb., already have been announced.

Safeway Stores, Inc., has announced purchase of about 46 acres of land in the vicinity of 72nd and "F" Sts. from the Omaha Industrial Foundation, for erection of seven warehouses to extend for a distance of about six blocks. The installation will include refrigerated storage facilities for all types of perishable foods.

Omar, Inc., with headquarters at Omaha, has taken out a building permit for a \$30,000 addition to the present bakery building at 45th and Nicholas Sts. This sum is for construction of the 88 by 50-ft. building and does not include refrigeration equipment to be installed. The building will be used for cold storage and for experimenting with freezing bakery products, a company official said. The building will be of concrete block lined with cork.

At Central City, a new business has been established under the name of Randy's Frozen Steaks. The plant includes complete refrigerated storage facilities ranging from sharp freezer to aging coolers. The plant is the sixth established by Warner Brothers, whose other plants are at

San Leandro, Calif., Tampa, Fla., Chicago, Manassas, Va., and Denver. The company processes an average of 50,000 steaks daily and has 30 refrigerated delivery trucks.

The Central City site was selected after a careful inspection of prospective locations in Kansas and Nebraska, according to H. J. Warner, who will be in charge of the Nebraska plant. The present location was favored because of its position on U. S. Highway No. 30 and Union Pacific mainline facilities. The plant also will process veal cutlets, sandwich steaks, pork tenderloins, pork chops, ground beef, and beef patties. It specializes in supplying restaurants.

Frank G. Pringle, Omaha division manager for Safeway, said grading of the newly acquired Omaha warehousing site is expected to start early in 1954. Construction is scheduled to start about mid-year, with completion in mid-1955. The plant will be single story, and will represent one of the largest food distribution centers in the world.

The meat warehouse will represent the most costly refrigeration installation, with 65,000 sq. ft. of cold storage. Other warehouses will have these sizes: Grocery, 182,000 sq. ft.; fruits and vegetables, 64,500; milk products, 12,000; frozen foods, 14,000; bakery, 10,000; bottle and box shed, 6,600. Only the latter will not have temperature and humidity control.

All of the warehouses will be under one roof excepting the bottle and

box shed. There will also be a truck repair shop and fueling station. An enclosed truck dock on 72nd St. will be nearly six blocks long, while rail facilities in the rear will permit simultaneous unloading of 54 cars.

The meat warehouse alone will hold 80 carloads of beef and have two miles of overhead track for moving carcasses.

Pringle said the center will maintain no manufacturing processes. It will serve as a "flow" point for merchandise going to the company's supermarkets in Nebraska, Iowa, Kansas, and Missouri. This distribution currently is being done through scattered warehouses.

Duncan Sells Coolers For Klimat Master Firm

CINCINNATI—Klimat Master Aluminum Products Co. here announces the appointment of George W. Duncan as general sales manager of the firm's newly-organized air conditioning division. He will supervise all sales of Carrier air conditioning equipment.

Prior to joining the Klimat organization, Duncan was an executive with a local department store, and also owned an appliance and television store.

Lamb Heads Sales for Kipp

CINCINNATI—James A. Lamb has been named vice president in charge of sales of Kipp Supply Co., distributor for General Electric heating and air conditioning.

Dayton Rubber Realigns Ad, Public Relations Depts.

DAYTON—A realignment of the sales promotion, advertising, and public relations departments of the Dayton Rubber Co. was announced recently by A. L. Freedlander, president.

J. D. Hershey, who has been sales promotion manager of the mechanical sales division, and who has been with the company for 24 years, has been appointed director of sales promotion and advertising. He will be responsible for the administration of all sales promotion and advertising for the company.

R. L. Wetzel, who has been in charge of both advertising and public relations, will now devote full time to an expanded public relations program, as director of public relations.

This involves the approaching 50th anniversary of the company in 1955, community relations in the several localities of the Dayton Rubber plants, and a national publicity program.

'Tinol' Solder Needs No Thickening Agent

PHILADELPHIA—An improved solder in paste form, called "Tinol," has been introduced by the American Solder and Flux Co.

Tinol was made possible by the development of a patented flux which permits the solder powder to be held in suspension permanently without the inclusion of a binder or thickening agent, the company said.

Since no binder is required, there is considerably less objectionable residue, and, at the same time, there are no ingredients which are either inert or slow down the fluxing action, it continued.

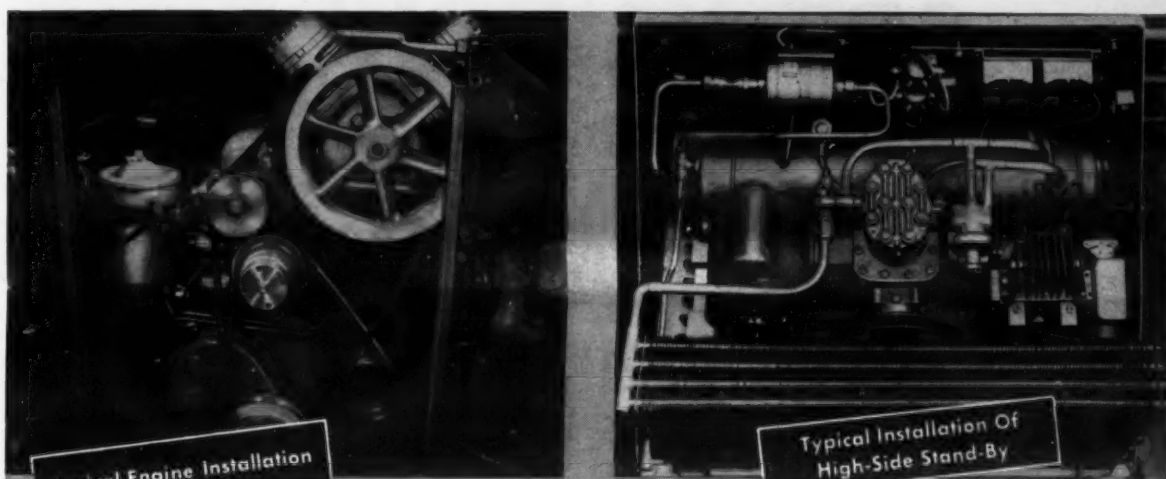
This increased fluxing activity eliminates the need for pre-cleaning and enables the paste to tin all metals except aluminum, it claims. The consistency of the solder in paste form permits it to be brushed smoothly and easily onto the metal surface.

J. & N. Distributes Deepfreeze

JACKSONVILLE, Fla.—J. & N. Distributing Corp. has been appointed Deepfreeze distributor for north Florida, it has been announced by Milton Felder, president of the distributing firm. Julius Broadman is vice president and Joseph Arva, secretary-treasurer.

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc. PRESSURE GAUGES and Dial Thermometers for all services. MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves. MARSH INSTRUMENT COMPANY Sales Affiliate of J. P. Marsh Corporation Dept. D., Skokie, Ill.



Typical Engine Installation

Typical Installation Of High-Side Stand-By

New PACKAGED Systems Simplify TRUCK INSTALLATION

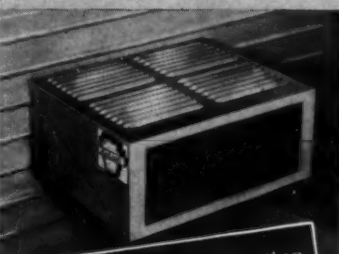
These new Lehigh TWO-COMPRESSOR SYSTEMS, now available through factory trained and fully qualified distributors, take fifty percent of the labor and guess-work out of the installation of truck refrigerating equipment. Not only are they much more compact than older models, but once installed they give much more room for servicing with all parts easily accessible. Controls, too, have been greatly simplified. Each "package" now contains every needed component and accessory for installation. Included are such important items as mounting brackets, wire clips, cord hangers, mounting screws and bolts, etc. Thousands of these fine Lehigh systems are now in use. Basic quality is unchanged. Only the package has been improved — for your greater convenience! We'll be glad to send you data sheets.

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Refrigeration Problems and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Cold Weather Problems (4)

By 1930, the old-time butcher shop was well on its way out. Largely due to mechanical refrigeration, it became possible to unite the butcher shop and the grocery in a single room. Fresh and cured meats, milk, butter, and other fresh food products could all be kept in mechanically refrigerated display cases and reach-in refrigerators, and the butcher shop became merely a department of the food market.

MECHANICAL REFRIGERATION PERMITTED BETTER DISPLAY OF MEATS

The emphasis began to be on display; enabling the butcher to pre-cut some of the meats into steaks, chops, and roasts. He could serve the customers faster and they could see and select the particular cut that took their fancy.

The old slaughter house was also fast becoming a thing of the past. By this time, most markets bought their meats from packing houses. They could get daily deliveries, which permitted better turnover and less trimmings. Many merchants did away with their walk-in coolers and depended entirely on display cases (still the enclosed type, however), and reach-in refrigerators.

The result of all this was that as far as meat markets were concerned, the problem of cold location of the refrigerated fixtures just about cured itself, for these fixtures were now in a warm room. Modern merchandising methods demanded that the market be kept warm and comfortable, so that customers could more leisurely do their shopping. The merchants found that as a result, the customer bought more merchandise than in a cold, disagreeable butcher shop.

The problems arising from the refrigerated fixture being located in a cold place were not and are not, even today, confined to the

meat market, however. The problems for other types of applications are similar and the butcher shop was used as a typical example of the effects of a cold location of the refrigerated fixture.

This same problem is still encountered in other applications, a very common one of which is the farm dairy. Like the old-time butcher, the farmer is accustomed to heat the milk house very little, if any. Moreover, it is used only a few hours a day.

HUMIDITY NO PROBLEM WITH SOME PRODUCTS

However, the problems arising from the milk cooler being in a cold location are not as acute as those of the meat market where the appearance of the meat is an important factor. An unappetizing surface appearance of meat will affect its salability even though the meat is quite nutritious and edible.

Thus the problem of cold location of the refrigerated fixture is very largely a matter of maintaining a salable appearance as far as meats are concerned. This same

factor does not apply to such products as milk, bottled drinks, canned goods, and many other products which are protected from drying, molds, etc., or which, by their very nature, are unaffected by humidity conditions.

For such products it is therefore merely a matter of maintaining correct temperatures with little regard to the humidity. This, of course, greatly simplifies any problems arising from a cold location of the refrigerator in which such products are kept. For these products, the use of a simple thermostat control is usually all that is necessary to assure adequate temperature control.

TOO COLD IS A PROBLEM ALSO

So far, we have been chiefly concerned with keeping the food cold enough, and the humidity and air circulation within acceptable limits. There are applications in which we must be concerned with the products becoming too cold. In some of these applications, the product may not be permanently damaged, but in others too low temperatures may completely ruin the product or its container, or may cause damage to the refrigerating equipment.

If the temperature around a walk-in cooler in which frozen food is stored at -5°, falls to -5° or even lower, no damage will be done to the frozen food nor to the cooler or the evaporator.

If the temperature around a walk-in cooler in which butter or cheese is stored at 36°, falls to 32° or even below freezing, the cheese or butter will suffer no perceptible damage. The same is true of furs; in fact, they would even benefit by an occasional freezing.

On the other hand, eggs, flowers, vegetables, milk, beer, bottled drinks, and similar products that would be damaged by freezing must be protected against low temperatures in the cooler that may result from below-freezing temperatures around the cooler.

PROTECTION AGAINST FREEZING

These products or their containers, or both, will be damaged by freezing temperatures. Most water coolers, draught beer coolers, and bulk milk coolers will be damaged by freezing temperatures outside the coolers that are low enough and of long enough duration to cause the liquids inside the coolers to freeze. The damage to the coolers may be much more serious and more costly than the damage to the product itself.

In those instances in which the temperatures surrounding the cooler fall below freezing, one remedy is to heat the room in which the cooler is located; or as is more commonly done, to supply heat inside the cooler itself.

In most installations, foresight can usually prevent the cooler from being subjected to below-freezing temperatures. If there is a possibility or probability of below-freezing temperatures around the cooler, every effort should be made to install the cooler in some other location, or to provide heating to the room in which the cooler is located.

There is one class of application in which below-freezing temperatures can be expected and which must be provided for. This class of application is mobile refrigeration, particularly interstate trucks and refrigerator cars. On a single trip, a refrigerated truck or railway car loaded with fruits, vegetables, or other perishables that may be damaged by freezing, may pass through a variety of temperatures.

The truck or railway car may be loaded on the west coast, and for some time will require a moderate amount of refrigeration. Then it may pass through a hot desert where the refrigeration equipment will be taxed to its utmost to maintain low enough temperatures to preserve the foods.

Following this, the truck or car may pass over high mountains where the temperatures may be far below freezing. Possibly the truck or car will pass through this low temperature area quickly enough that the temperature of the foods may not become low enough to cause damage.

Nevertheless, precautions must be taken against breakdowns that might cause the truck or car to remain several hours or days in the freezing weather longer than was expected. Provision must therefore be made for heating the truck or car if need arises.

PORTABLE HEATERS

A very simple and inexpensive means of heating the truck or refrigerator car is a small portable oil-fired heater that may be placed in the truck body or refrigerator car and which will supply enough heat to keep the inside temperatures high enough to prevent damage to the food.

This is the method used for railway cars refrigerated by ice, and by some trucks. The oil heater must be handled, lighted, and controlled manually by the train crew or truck driver. It does not maintain temperatures very evenly, and the temperatures must be carefully watched.

HEATING BY REVERSE CYCLE

Mechanically refrigerated trucks and railway cars can make use of the reverse-cycle principle—also called the heat pump. By appropriate valve arrangements, the evaporator inside the truck or car can be converted to an air-cooled condenser, and the air-cooled condenser outside the truck or car can be converted to an evaporator. Thus, heat will be absorbed by the normal condenser (now an evaporator) from the cold, below-freezing outside air, and discharged into the car or truck by the normal evaporator (now acting as an air-cooled condenser).

This method, while perhaps greater in first cost than an oil heater, had advantages. It is cleaner and safer, and the air temperatures inside the truck or car can be automatically controlled and maintained more nearly constant.

Up to this point, we have confined our consideration of problems due to cold location to the refrigerated fixture itself, the product, and the evaporator. In the next issue we will discuss the cold location problem as it affects the condensing unit.

(To Be Continued)

ARE YOU SURE YOU'VE NEVER HAD TROUBLE WITH OIL?

A recent survey of refrigeration failures and their causes showed that oil was blamed in less than 0.1% of the cases. Moisture, expansion valves and strainers were thought to be culprits almost 20% of the time. On the surface, this looks good for refrigeration oils. But before you cross oil off your list of possible causes of trouble, let's take another look.

If moisture causes a failure, it has to get into the system somehow. Sloppy handling of oil or improper purging can cause moisture problems. But so can inferior refrigeration oils that haven't been properly processed.

Strainers, expansion valves, and capillaries shouldn't really be listed as the cause of failure if they're clogged. The real culprit is the stuff that is passing through them. Here again, inferior refrigeration oils that form sludge or contain too much wax are often to blame.

The best way to avoid a lot of call-backs is to use Suniso... the refrigeration oil that is used and recommended by most refrigeration manufacturers. Controlled from crude to can by oilmen, Suniso always assures you of both uniformity and high quality... it eliminates all your oil problems.

**Sold Everywhere by
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Admiral Sales for '53 at New High But Profit Down

CHICAGO — Consolidated net sales of Admiral Corp. reached a record peak of \$250,931,605 in 1953, 31% higher than the preceding year's \$191,224,356 and 9% above the previous record of \$230,397,661 set in 1950.

Ross D. Siragusa, president, said in the company's annual report to stockholders that net earnings for the year were \$8,213,165, or \$3.48 per share on 2,358,276 shares now outstanding, a 6% decrease from the \$8,711,133 or \$3.69 per share earned in 1952 on the basis of an equivalent number of shares.

Siragusa attributed the lower earnings to several factors, including additional tooling and pre-production costs of new products—room air conditioners, home freezers, and an "up-side down" refrigerator, generally rising production costs and stiffening competitive conditions.

A plant expansion program was continued during 1953 with the investment of over \$5,500,000 in capital expenditures. The company also invested over five million dollars in new plant construction and equipment in the previous year.

Siragusa said that the company's entrance into the room air conditioner and freezer fields was successful and, given the important stimulant of hot weather, the room air conditioner division may double its 1953 sales.

The new "up-side down" refrigerator-freezer, which was introduced to distributors at the end of the year, has been enthusiastically received and is now in production, Siragusa said. This new model has a 3.5-cu. ft. sub-zero freezer chest with a capacity of 122 lbs. at the bottom of the cabinet, plus moist cold food storage capacity equal to a conventional 9-cu. ft. refrigerator, he stated.

The Admiral official said that export sales of all products were substantially higher in 1953 than in any previous year. Defense production continued at a high level.

The no-strike record, which the company has enjoyed since it was founded 20 years ago, was continued throughout 1953.

Curtis Mfg. Elects Hecker Engineering Vice President

ST. LOUIS—Curtis Mfg. Co. has announced the election of Harvard K. Hecker as vice president in charge of engineering.

Hecker, who has been with the company since 1944 as product design engineer, received his Bachelor of Science degree in mechanical engineering from Massachusetts Institute of Technology and did postgraduate work at Harvard Graduate School of Business Administration.

From 1940 to 1944, Hecker worked as a design engineer on power transmissions and rolling mill equipment.

Armstrong Cork Advances Three In Industrial Div.

LANCASTER, Pa. — A number of changes in the general staff organization of the Industrial Div. of the Armstrong Cork Co. has been announced by W. B. Tucker, general sales manager of the Industrial Div.

D. P. Paiste, manager of felt and fibrous products department since 1951, has been named assistant general sales manager of the Industrial Div.; C. T. Potts, manager of the shoe products department since 1950, became manager of felt and fibrous products department; and D. M. Smith, assistant manager of the industrial adhesives department since 1949, succeeds Potts as manager of the shoe products department.

U. of Missouri Plans A.C. No Excise Cuts Planned By Senate Committee

COLUMBIA, Mo.—An air conditioning conference sponsored by the mechanical engineering department of the University of Missouri will be staged in the new Memorial Student Union on the university campus here on April 12 and 13, Prof. M. M. Bolstad of the mechanical engineering department announced recently.

The meeting will be for retail dealers and sales personnel, architects and engineers who specify air conditioning, servicemen, and users of air conditioning.

Subjects to be presented include fundamentals of air conditioning, psychrometry and air flow measurements, estimating and calculating loads, self-contained systems, room coolers, motors and electrical devices, controls, cooling towers, water conservation, and operation.

WASHINGTON, D. C. — Senate finance committee members indicated that they did not expect to provide for any relief in manufacturers' excise taxes on appliances when they report their tax bill to the Senate.

This opinion was gained after Robert M. Burr, of the excise tax committee of the National Electrical Manufacturers Association, appealed to the committee last week for tax reductions on refrigerators, freezers, home laundry equipment, and other electric, gas, and oil appliances.

He argued before the committee that the excise tax results in "price pyramiding."

It is possible that the bill might be amended to provide such relief after it reaches the Senate floor, however. But the probabilities are against it.

Westinghouse Halts Sales to 'Club Plans'

MANSFIELD, Ohio — Westinghouse Electric Corp. recently announced that, in order to avoid possible difficulty in the enforcement of fair trade prices, it will no longer sell fair-traded appliances to organizations using so-called "club plans," involving challenged pricing practices.

Such "club plans" include special sales presentations made to groups or clubs in which the purchase of one article may entitle the purchaser to a lower price on another article.

Robert M. Oliver, manager of portable appliances for Westinghouse, said the move to discontinue any such sales is being made "so that there will be no doubt as to the determination of Westinghouse to enforce its fair trade prices."

He referred to a recent opinion

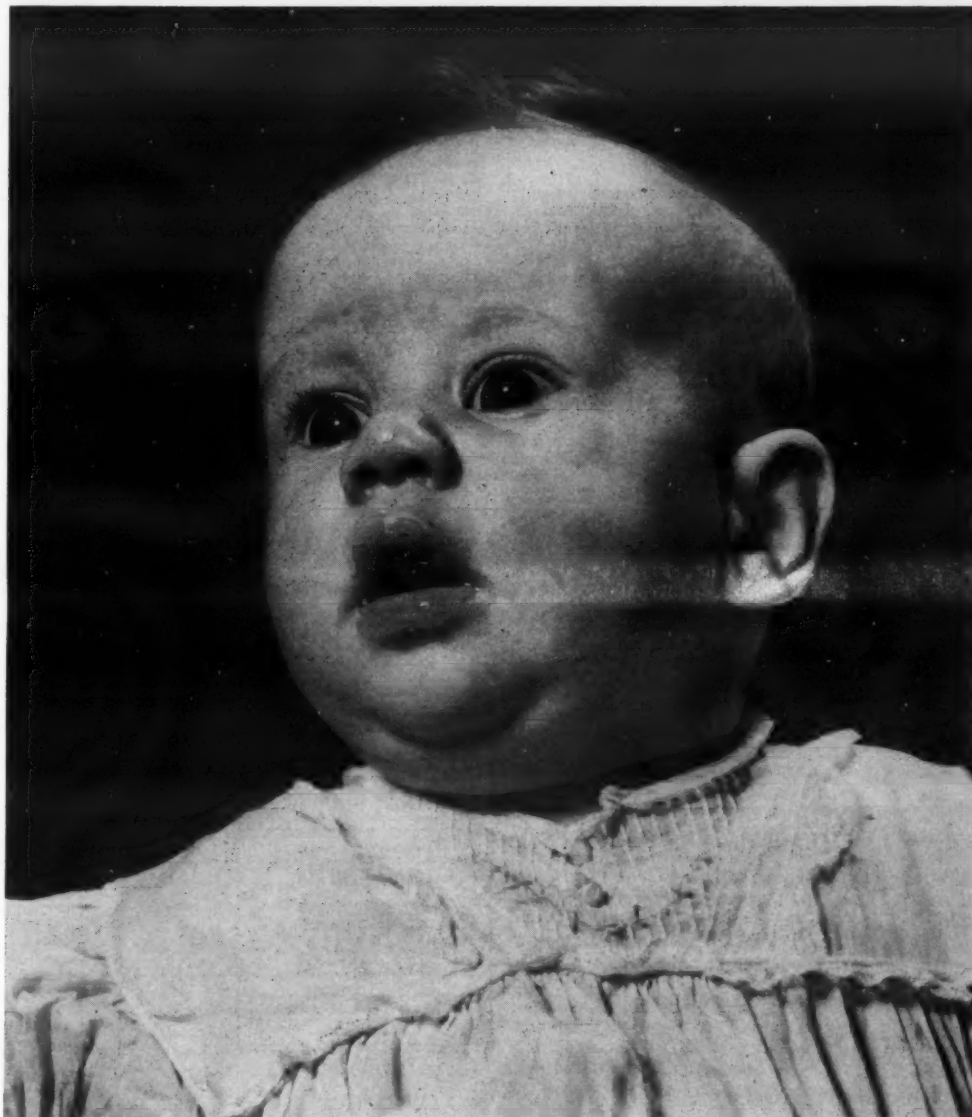
denying a preliminary injunction to Westinghouse in a fair trade case because of the existence of "club plans" in which Westinghouse fair-traded merchandise had been distributed.

"Although this decision is only preliminary and the case has not yet been tried, Westinghouse has decided to take all steps necessary to stop such club plan sales rather than await a final determination by the court," Oliver said.

"We firmly believe in the wisdom and justice of the fair trade laws which are in effect in the various states and intend to pursue vigorously our fair trade program."

Airtemp Names All-Tex

DALLAS, Texas — Appointment of All-Tex, Inc. as Dallas dealer for Chrysler Airtemp was announced recently by Joe Baggesse and Morris Steinberg, heads of the firm.



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distributors, contractors, and wholesalers behind your promotional campaign with your sales story in this April 19 issue of AIR CONDITIONING & REFRIGERATION NEWS.

A swelling audience of readers has boosted NEWS circulation among men who know, make, and sell air conditioning. They read the NEWS because here they get the industry information they can obtain nowhere else. All this makes the NEWS your best advertising buy.

Write your NEWS representative listed below to reserve space today in the April 19 issue.

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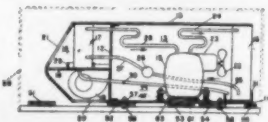
AIR CONDITIONING & REFRIGERATION News

450 W. FORT ST., DETROIT 26, MICH. WO. 2-0924

PATENTS

Week of December 8
(Concluded)

2,661,836. AIR CONDITIONING UNIT AND APPARATUS FOR SHIPPING. Bernard W. Jewell, Wichita, Kans., assignor to The O. A. Sutton Corp., Inc., Wichita, Kans., a corporation of Kansas. Application Aug. 1, 1952, Serial No. 302,265. 4 Claims. (Cl. 206-46.)

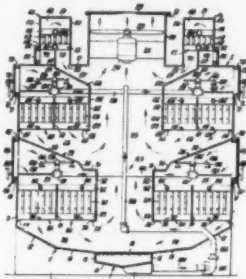


1. In combination for shipping purposes; a heavy appliance including a resiliently mounted, motorized unit, said appliance comprising a bottom wall having an opening therein, means attaching said unit to said wall including a plurality of resilient mounting means in surrounding relation to said opening and resiliently supporting said motorized unit above said bottom wall during operation, and a plurality of threaded members attached to said bottom wall in spaced relation to said opening; a pallet comprising a support projecting through said opening into engagement with the bottom of said motorized unit; and a plurality of shipping bolts engaging said threaded members to hold said pallet and said bottom wall in face-to-face engagement during shipping.

2,661,933. EVAPORATIVE COOLER FOR CONDENSING HOT COMPRESSED GAS. Charles N. Deverall, Buffalo, N. Y., assignor to Niagara Blower Co., New York, N. Y., a corporation of New York. Application Feb. 25, 1952, Serial No. 273,216. 10 Claims. (Cl. 257-37.)

1. A cooler of the character described, comprising a shell having top, bottom, front, rear and side walls, an internal baffle at each side of said shell and extending horizontally lengthwise of said shell and forming with the corresponding

side wall a pair of spray chambers arranged one above the other, a generally vertical wall enclosing the inner upper part of each of said spray chambers and having a space thereunder providing an air outlet from the lower inner part of each spray chamber to a central plenum chamber bounded by said generally vertical walls, a plurality of air inlets in each of said side walls and each leading to the upper part of cooling coils in each

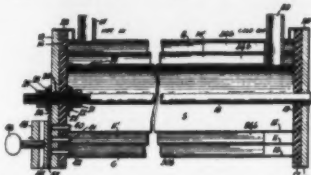


of said spray chambers between its air inlet and its air outlet and through which the fluid to be cooled is adapted to pass and over which the air from the corresponding air inlet flows downwardly and out through the corresponding air outlet, the cooling coils of each pair being arranged side by side to extend generally parallel with the adjacent side wall of said shell, a vertical partition between each pair of said coils and extending parallel with the adjacent side wall of said shell, means arranged in the upper part of each spray chamber above the cooling coils therein to discharge and distribute a stream of water over the cooling coils therein to wet the exterior of said cooling coils and to evaporate and absorb heat therefrom, a pump recirculating water from said sump to said discharging and distributing means, an exhaust duct in said shell leading from said plenum chamber, and an exhaust fan in said exhaust duct.

2,661,934. LIQUID-TO-LIQUID HEAT EXCHANGER. Robert C. Stutz, Buffalo, N. Y., assignor to Niagara Blower Co., New York, N. Y.

1. A heat exchanger, comprising spaced outer, intermediate and inner tubular open ended sheet metal shells of substan-

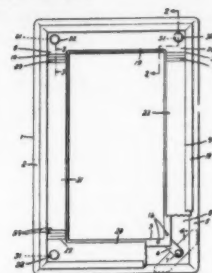
tially the same length arranged in generally concentric, spaced relation to one another, a pair of end heads, gaskets arranged against the opposing faces of said



end heads and each removably engaging and enclosing corresponding ends of all of said shells, means arranged to draw said end heads together to force said gaskets against said ends of all of said shells, a first series of radial partitions extending lengthwise of and connecting said outer and intermediate shells and forming a circumferential first series of axially extending passages enclosed at their ends by said end heads with alternate partitions engaging the same end head and spaced from the opposite end head to provide a first series of passes adapted to conduct a stream of fluid back and forth the full length of said shells, a radial partition extending the full length of and connecting said outer and intermediate shells and engaging both of said end heads to provide an entering and a leaving pass in said first series of passes, an inlet communicating with said entering pass, an outlet communicating with said leaving pass, a second series of radial partitions extending lengthwise of and connecting said intermediate and inner shells and forming a second circumferential series of axially extending passages enclosed at their ends by said end heads with alternate partitions of said second series engaging the same end head and spaced from the opposite end head to provide a second series of passes adapted to conduct a stream of a second fluid back and forth substantially the full length of said shells, another radial partition extending the full length of and connecting said intermediate and inner shells and engaging both of said end heads to provide an entering and a leaving pass in said second series of passes, another inlet communicating with said entering pass of said second series of passes, and another outlet communicating with said leaving pass of said second series of passes.

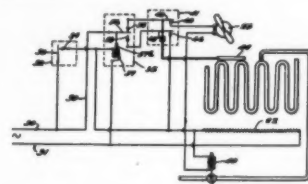
Week of December 15

2,662,354. REFRIGERATOR BREAKER STRIP ASSEMBLY. George C. Harbison, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 20, 1950, Serial No. 125,729. 1 Claim. (Cl. 20-35.)



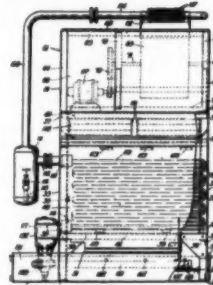
A refrigerator structure or the like comprising an outer wall, an inner wall spaced from said outer wall and supported thereon, a breaker strip assembly extending around the perimeter of said inner wall for closing the space between said walls, said assembly including a pair of horizontal breaker strips extending along the top and bottom of said inner wall, said assembly further including a pair of vertical breaker strips extending along the sides of said inner wall, and means for securing said breaker strips to said inner wall, each breaker strip of one of said pairs being shaped to include a return bent flange at each end providing an outwardly facing recess, each breaker strip of the other of said pairs being shaped to provide an inwardly extending tongue at each end, said tongues being received within corresponding recesses for interlocking said breaker strips, each of the abutting edges of said breaker strips being chamfered to provide grooves, at least one of said pairs of breaker strips including a plurality of grooves therein adjacent the ends thereof and parallel to corresponding ones of said first mentioned grooves.

2,662,390. AUTOMATIC DEFROSTING SYSTEM FOR REFRIGERATION MACHINES. Myer Stephen Sutton, Minneapolis, Minn., assignor to Pres-O-Mat Corp., Chicago, Ill., a corporation of Illinois. Application Feb. 6, 1951, Serial No. 209,592. 7 Claims. (Cl. 62-3.)



1. In a refrigeration machine having an evaporator through which refrigerant is circulated to reduce the evaporator to cooling temperature and means for causing a stream of air to pass over the surfaces of the evaporator and into the space to be refrigerated, means intermittently operative responsive to time control for introducing heated fluid medium at high pressure into the evaporator to increase the temperature thereof and substantially simultaneously for inactivating the means for causing air flow, a thermostatically controlled element, responsive to the temperature on the surfaces of the evaporator to stop circulation of the heated medium through the evaporator whereby refrigerant is allowed to continue there-through when the temperature on the surfaces of the evaporator rise above freezing, and means responsive to the thermostatically controlled element for re-activating the means for causing air circulation over the evaporator when the temperature thereof falls to below freezing subsequent to circulation of refrigerant therethrough.

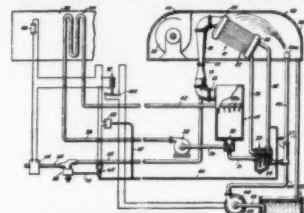
2,662,741. CONDENSER COOLING UNIT. John E. Boyle, Chicago, Ill., assignor to Buldico Co., Inc., Chicago, Ill., a corporation of Illinois. Application Sept. 13, 1948, Serial No. 42,951. 13 Claims. (Cl. 257-37.)



1. In cooling apparatus of the class described comprising a cooling chamber having a cooling coil assembly therein, and a fan above said chamber for drawing air upwardly therethrough in contact with said coil assembly, the combination of a base pan for receiving a liquid and affording a foundation for said cooling apparatus, a main frame structure adapted to be erected within said pan comprising two end plates supported in spaced relation upon the bottom of said pan with the bottom of said pan serving as a uniform supporting foundation for said end plates and the side walls of said pan preventing outward separation of the lower ends of said end plates, said end plates comprising metallic sheets having reinforced portions for stiffening the sheets vertically, longitudinal frame bars extending between and joining said end plates, said end plates defining the ends of said cooling chamber, and side cover sheets secured to said main frame structure for closing the sides of said cooling chamber, the lower edge of one of said side cover sheets being spaced from the adjacent side edge of said pan for defining an air inlet opening into the lower end of said cooling chamber, said coil assembly within said cooling chamber being carried by said end plates, and said fan means at the upper end of said cooling chamber for drawing air upwardly therethrough being also carried by said end plates.

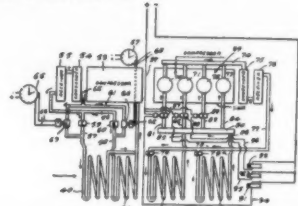
Week of December 22

2,663,155. AIR CONDITIONING SYSTEM. John D. Strobell, New Haven, Conn., assignor to The Safety Car Heating and Lighting Co., Inc., New Haven, Conn.



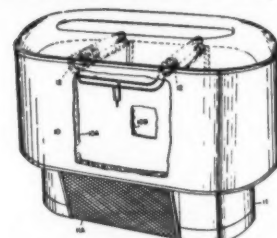
1. In a control for a steam ejector air conditioning system including a thermostat, an evaporator, means for circulating the coolant, a steam ejector for drawing a partial vacuum on said evaporator, a steam pressure pipe connected to said ejector, a condenser, and means for drawing a partial vacuum on said condenser at the start of a cycle of operation, in combination, a pressure responsive valve controlling the flow of steam through said pipe, means forming a pressure conducting connection between said condenser and said valve, for controlling the position of said valve by the pressure in said condenser, means for disconnecting said connection, and means operatively connecting said last-mentioned means to said thermostat, said thermostat controlling the operation of said disconnecting means and operation of said valve.

2,663,156. APPARATUS FOR COOLING AND DEHUMIDIFYING AIR. Jess P. Baker, Peoria, Ill.



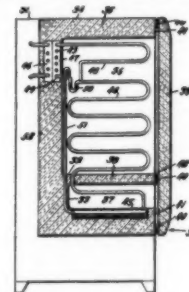
1. An air dehumidifying and cooling means comprising an elongated housing, means circulating air through said housing, spray means adjacent the intake end of said housing, filter means inwardly of said spray means, dampers inwardly of said filter means, a rear pair of cooling coils in said housing, a cooling means connected with said coils, a second pair of cooling coils forwardly of said first pair of coils, a second cooling means connected with said second pair of cooling coils, thermostatically operated means carried by said housing and connected with said second cooling means for varying the effectiveness of the latter in accordance with the temperature of air leaving said housing, and timed means connected between said first pair of coils and said first cooling means for effecting a defrosting of said first pair of coils.

2,663,158. FROZEN FOOD CABINET. Ernest E. Sanders, Garland E. Sanders, and Ellsworth E. Sanders, Detroit, Mich.



1. A frozen food cabinet having a normally open top and consisting of a heat insulated food receiver having a refrigerating coil lining its vertical walls, an air dehydrating coil extending across the open top of said receiver above the level of said lining and below the top opening, means for selectively defrosting said dehydrating coil, and means for removing the water from said defrosting.

2,663,159. REFRIGERATOR EMPLOYING SECONDARY REFRIGERATION SYSTEM. Hugo Malcolm Ullstrand, Stockholm, Sweden, assignor to Aktiebolaget Elektrolux, Stockholm, Sweden.



1. A refrigerator including a cabinet having first and second thermally insulated compartments, a primary evaporator having portions operable at average or mean temperatures above and below the freezing temperature of water, a closed heat transfer system containing refrigerant fluid and a non-condensable gas whose specific weight is greater than that of the refrigerant fluid in vapor phase, said system comprising a condensation section in heat exchange relation with both portions of said primary evaporator and a vaporization section including one portion in thermal relation with said first compartment and another portion in thermal relation with said second compartment, and means comprising said closed heat transfer system for transferring cooling effect from both portions of said primary evaporator to said compartments to maintain one of said compartments at an average or mean temperature below the freezing temperature of water and the other of said compartments at an average or mean temperature above the freezing temperature of water.

(To Be Continued)

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3-22-54

Universal Major elec Re-Elects Board, Officers

LIMA, Ohio—All directors of Universal Major elec Appliances, Inc. were re-elected at the annual stockholders meeting held here.

Directors renamed were Morton L. Clark, R. H. Money, and George J. Madill of Lima; T. G. Harris, president of Porcelain Steel Corp., Connersville, Ind.; H. W. Schaefer, president of the H. W. Schaefer Co., Baltimore; C. D. Clawson, president of The Ferro Corp., Cleveland; Leo T. Norville, senior partner of the law firm of Norville & Dent, Chicago.

Directors then elected the following officers of the company: Clark, president; Money, vice president in charge of engineering; W. B. Clayton, Jr., vice president, general sales manager, and assistant secretary; T. E. Evans, vice president in charge of purchasing; Albert M. Gillett, treasurer; Edward Moody, controller; Norville, secretary.

Also named were J. E. Stockwell, assistant treasurer; A. L. Bishop, assistant secretary; Krell Bosler, assistant secretary and works manager of the Baltimore plant; Louis L. Dent, assistant secretary; and Steve Franks, works manager, Lima plant.

Directors also voted to change the name of the North Carolina Mfg. Co., wholly owned subsidiary, to Mirawal Corp.

Four Distributors Win Week's Trip In Warren Sales Contest

ATLANTA—Four winners in the Warren Co.'s recent national sales contest were announced recently by the company.

They and their wives will receive a week's trip to the Waldorf-Astoria in New York City or the Monte Carlo in Miami Beach, Fla., plus a check for the wife to spend as she pleases while on the trip. Check to the wife of the first prize winner was \$400, for second prize \$300, third prize \$200, fourth, \$100.

Winners were: Frank Cox of Cox Refrigeration, Frederick, Md.; G. C. Richey, Richey Refrigeration and Equipment Co., Columbia, S. C.; Russell E. Rich, Jr., Rich Refrigeration Co., W. Palm Beach, Fla.; and L. C. Warren, Jr., L. C. Warren, Jr. Co., Inc., Atlanta.

Approximately 200 distributors throughout the United States participated in the contest, which was known as the East-West Cross-Country, Warren said. There were six other distributor prizes including three-dimensional camera outfits, complete silver tea-and-coffee services, and cash awards.

In addition, there were six cash prizes to the salesmen employed by these distributors. Sixty-two of the distributors produced more than 100% of the special contest quota assigned to them.

Air Conditioning and Its Application

A book analyzing air conditioning's growth, its future, design factors, selling methods, and service techniques has just been published.

AIR CONDITIONING & ITS APPLICATION was reprinted from various issues of AIR CONDITIONING & REFRIGERATION NEWS. 116 pages, 8½ x 11. Price: \$1.50 per copy. Order your copy now. Use coupon below.

Contents:

SECTION I: Year-Round Residential Air Conditioning

PART I: General Analysis

1. Growth and Future
2. What Builders Want

PART II: Design Factors

1. Installation Techniques
2. Odor Control

PART III: Application (Where the Units Have Been Installed)

SECTION II: Room Coolers

PART I: Design Factors

1. General
2. Capacity
3. Rating
4. Wiring

PART II: Selling Methods

PART III: Service

PART IV: Applications (Where Units Have Been Installed)

SECTION III: Commercial Air Conditioning—Packaged and Central Station

PART I: Design

PART II: Service

PART III: Applications (Where Units Have Been Installed)

SECTION IV: Miscellaneous

PART I: The Doctors Tell us—

Air Conditioning Can Be Beneficial

PART II: Miscellaneous Ideas and Applications

PART III: As the Editors See It

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Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

DEPARTMENT OF DEFENSE

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Ordnance Ammunition Center, Joliet, Ill.; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. Ordnance District Offices do not have information on any other purchases.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q," or, if numbered, the number will be followed by the letter "Q."

Description	Quantity	Invitation No.	Opening Date
Purchasing & Contracting Office, Scott Air Force Base and 3310th Technical Training Wing, Scott Air Force Base, Illinois	Job	(11-601-54-25B)	22 Mar 54
Installation of an air conditioning unit, for the Dental Clinic, Bldg. No. T-896 at Scott Air Force Base, Illinois.			

Description	Quantity	Invitation No.	Opening Date
Purchasing and Contracting Officer, Redstone Arsenal, Huntsville, Alabama			
Chamber, test, sand and dust, complete with blowers and motors, heating elements, dehumidifying coils, etc., in accordance with Military Specifications MIL-E-5272 A, Section 4-11.	1	(CS 6132-54)	29 Mar 54
Chamber, test, temperature, complete with blower and motor, heating elements, cooling coils, controls, recorders, etc.	2	(CS 6131-54)	29 Mar 54

Description	Quantity	Invitation No.	Opening Date
Post Purchasing Office, Fort Dix, New Jersey	Job	(A1-25-013-54-41B)	31 Mar 54
Installation of Air Conditioning and Ventilating System in Theater No. 5 consisting of two 40-hp. Refrigerating Condensing Units in wood frame enclosure, cooling tower and transformer bank			

Mitchell Names District Mgrs.

LOS ANGELES—Appointment of two new district sales managers in the Mitchell room air conditioning division of the Ray Thomas Co. here has been announced by General Manager Louis R. Swenson.

Jack Pearce was named as San Fernando Valley representative for Mitchell while Al Hanks, brother of race driver Sam Hanks, was appointed to the San Gabriel Valley area.

Pearce was formerly with the Sears organization in the air conditioning field while Hanks held the sales manager's post at Temple City Appliances before joining Thomas.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

POSITIONS WANTED

PRODUCT DEVELOPMENT engineer—Relocating south, Midwest or southwest. Chemical engineering training and eleven years' extensive experience research and development in heat transfer field. Present employment activities have included wet and warm air heating and air conditioning products. Management position sought. BOX 4533, Air Conditioning & Refrigeration News.

ATTENTION, MANUFACTURERS—Maybe you don't need a full-time writer for your instruction sheets and manuals. In that case, it will pay you to look into a new writing service offered by a practical refrigeration and air conditioning man who can handle clear "American" English. VIRGIL C. JAMES, Cuba, Missouri.

POSITIONS AVAILABLE

SALES REPRESENTATIVE: Man to handle outstanding line of draft beer dispensing equipment—taps, tap rods, faucets, draft arms, compressors, etc. This line will provide the perfect supplement for a manufacturer's representative now handling direct draw dispensing units. Territory covers Ohio, Indiana, Michigan, West Virginia, Kentucky and Western Pennsylvania including Pittsburgh. Please send complete details of background and experience to BOX 4534, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

ATTENTION SERVICEMEN: Send for our refrigeration parts and supplies catalog. Save up to 50% on many items. Relays, V belts, T.X. valves, fittings, controls, driers. New—guaranteed merchandise. WALTER W. STARR REFRIGERATION, 2833 Lincoln Avenue, Chicago 13, Illinois.

600-Cu. Ft. Sharp Freezer Boosts Profits From Baked Goods at Richards Lido Market

NEWPORT BEACH, Calif.—Profits from the sale of baked goods have risen sharply at Richards Lido Market here since the installation of a 600-cu. ft. sharp freezer.

Installed adjacent to the store's bakery, the custom-built freezer maintains a -10° F. temperature and is thermostatically safeguarded to cut in secondary compressor service in the event that anything goes awry with the first.

The stainless steel freezer permits the bakery to operate "two days ahead," according to Dwight W. Weaver, bakery department manager.

Likewise, it permits the sale of store-produced baked goods at three points throughout the store, the production of many out-of-season specialty items, and protection against "run-outs" and customer disappointment.

Some 50% of the freezer is devoted to the bakery department, the rest to ice cream, frozen foods, and other specialty baking ingredients.

Bakers now work constantly two days in advance freezing bread, cake, stollens, cookies, rolls, and other items so that an adequate inventory will be on hand against sudden rushes of heavy volume. A time limit is set on all frozen products and if they are

not sold on an overload rush basis before the end of this period, they are placed on sale and a new batch frozen.

Bakers who formerly had little to do on Monday, Tuesday, and Wednesday, then slaved to meet week-end demand on Thursday and Friday, may now apportion their work out over the entire week.

Not the least important factor in the use of the sharp freezer, which has boosted baked goods sales to 4½% of the total store volume, is the "three point" display system which has been developed.

With the freezer, it is possible to turn out pies, turnovers, specialty whipped cream goods, etc., which are packaged in cellophane and sold out of the store's frozen foods cases, which formerly had little to offer in the way of bakery products.

Second, the frozen baked goods are displayed, after thawing, in the standard bakery department, which occupies some 30 ft. of wall space on the right side of the store.

The freezer can accommodate from 60 to 80 cakes, 80 to 100 pies, 200 lbs. of cookies, 80 to 100 packages of fruit turnovers, a similar number of party baked goods, coffee cakes, doughnuts, etc., according to Weaver.

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Bright Future for Industry--

(Concluded from Page 1, Col. 3) industry started calling itself a billion dollar industry. Estimates of consumer expenditures for air conditioning systems and equipment range from one billion to one and three quarter billion dollars, and it has become fashionable to predict growth up to five billion a year within a short time.

Four Basic Systems

"To understand these figures it is necessary to examine the four basic types of systems and equipment. Let's look at residential air conditioning systems first:

"The American Institute of Management forecasts that 1954 will see 120,000 units installed and that the use of such systems will increase at the rate of 120,000 units per year for the next two years ultimately reaching 700,000 units during the year 1958.

"What is the justification for such optimistic sales figures as these? Look at these facts and figures about American homes.

"New homes have been built at the rate of one million a year for the last seven years. Twenty-five million of U. S. homes today have central heating and more than half of these, about 13½ million, are equipped with warm air heat and can therefore be considered prospects for year-round air conditioning. In addition, there are 11½ million dwelling units equipped with steam or hot water heating which are prospective users of central water chilling packages or independent summer air conditioning systems.

"In commercial packaged equipment, 1953 was the industry's biggest year for commercial packaged air conditioners.

Commercial Volume

Can Be Doubled, Redoubled

"We estimate that over 75,000 units were produced during the year. That's a total retail volume of over \$150 million. This volume can be doubled in the next five years, and doubled again in the succeeding five years.

"In the room air conditioner market, the Air-Conditioning and Refrigeration Institute estimated that manufacturers' shipments of room air conditioners for 1953 exceeded one million units; sales at the retail level amounted to about two hundred and seventy million dollars worth of units.

"We expect that this volume will eventually level off at around two million units per year for a retail volume in excess of half a billion dollars.

"Central-station air conditioning—for business, commercial, and industrial establishments—is the oldest division of our industry. But our belief is that the potentialities in this field are still enormous. Only a fraction of the business, commercial, and industrial establishments of the country are air conditioned.

See Industry 'Recessionproof'

"There has been so much talk about an eventual recession or a depression that I think it is worth noting that you have in air conditioning what seems to me to be a very strong defense against depression. What will happen to the air conditioning industry if we have a general business recession?

"I would expect the volume of air conditioning business to keep right on increasing. Obviously it will go up faster if the general economy continues strong and healthy but it seems to me almost certain to go up, no matter what happens. There are even reasons to argue that a recession would have a positive effect on the sale of air conditioning systems.

"First, sharpened competition for retail sales would force more and more stores to air condition

in order to hold present customers and attract new ones.

"Second, manufacturers will be seeking ways to lower production costs and improve the quality of their products. Air conditioning of factories has dramatically proved its value in achieving both objectives. Hence, it would tend to be used on a wider scale by manufacturers who feel the pinch of competition.

"Third, competition in the housing field would be such that new homes would have to be offered fully air conditioned while rental properties not so equipped would have to be modernized with air conditioning to remain rented to capacity.

Manpower—A Major Problem

"Our major problem as an industry is trained manpower at all levels—the professional engineer, the manufacturer, the installer, and the serviceman. How rapidly this trained manpower is provided will govern to a great degree the time that it will take us to realize our great opportunities. This is not a problem that is limited to any one segment nor one that any one organization or group of organizations is going to solve."

Jones Sees Special Kind Of Sales Effort Needed

"As we look forward in 1954, there is hardly a cloud on the horizon. Inventories are lower, and in many fields, notably in the construction industry, a pick-up has been reported in recent weeks. There is some pessimism, but talk about rising joblessness can reflect political bias.

"Average monthly unemployment as a percentage of the total labor force, is the lowest since the start of the Korean war. As a pledge against that unemployment, and as an expression of their faith in the future, industry plans capital outlay of about 26 billion dollars this year.

'Hidden Pressures' = Economic Incentives

"There are other interesting perspectives. Last summer, Arnold Johnson of J. Walter Thompson, pointed out the more important pressures being brought on our economy, that not only would prevent the recession that some of the politically-minded pessimists are insisting on forecasting, but would result inevitably, in a continuation of very excellent economic conditions. He listed them as follows, calling them 'hidden pressures':

"1. Change in the discretionary spending power of the mass of the population. That is, the amount of income over and above what would be needed to supply the 1940 per capita level of such necessities as food, clothing, and shelter, and states that this now is five times as great as in 1940. He points out very interestingly, that because of this increased spending power, consumer credit could increase by 75% before equaling its 1940 relationship to discretionary income.

"2. The change in the age make-up of our population—with over 65% more children under five than in 1940—people who will be buyers in the not too distant future—and, of course, there are four times as many people over 65 in this country now, as there were only a few years ago.

"3. Change in the education level of our people. Eighty per cent more high school graduates than in 1940, with a corresponding pressure for higher standards of living.

"4. The age of our dwellings, plus the increasingly important factor of obsolescence.

"5. The change in the number of motor vehicles, with 72% more

vehicles on the road which puts this pressure for more roads, more streets, more garages, more parking facilities, that were not adequate, even with a smaller number of automobiles in 1940.

"6. Change in our farm population. Some seven and one-half million less since 1940, and a net shift of about 14,000,000 people to the non-farm population. A pressure indicating the need for a higher and higher level of non-agricultural production.

Population Shift To Suburbs

"7. The population shift to the suburbs. Our suburban areas are growing at five times the rate of the rest of the country.

"The only cloud that I see on the horizon, is the question as to whether or not our industry is geared up to the job of finding markets in proportion to its ability to produce. Two things we must keep in mind. One, we must want our prospects to want our products more than they want others. Second, those prospects must have the ability to buy.

"If you are running a factory, concentrate on selling this year. If you are a wholesaler or a retailer, concentrate on selling this year. If you are an individual salesman, concentrate on selling this year.

"What do I mean by selling? Here are four definitions of creative selling: First, 'Creative selling is to convert luxuries and con-

veniences into necessities through salesmanship.' Second, 'It is to sell the right price against cut-throat competition.' Third, 'It is to divert a family's discretionary income to one's own products or services.' Fourth, 'Generate an appetite to buy, in people not hungry.'

Ours Is 'Economy of Wants'

"Certainly we are justified in stating that ours is an economy of wants. Up until a few years ago, we were so busy building a nation and supplying basic needs that we had relatively little time for creating wants.

"With the industrial revolution, we saw the birth of selling. We found it necessary as well as desirable, to make people want things—things that they frankly could get along without—things that people all over the rest of the world are getting along without, if we were to continue an increasingly high standard of living, an increasingly high per capita income, and increasingly high and continued employment."

Reading Opens Cleveland Depot

NEW YORK CITY — Reading Tube Corp. recently opened a new distribution depot in Cleveland, Martin Mack, president, has announced.

The new distribution center is capable of warehousing a complete stock of tubing and pipe and will provide improved delivery service to Ohio and to parts of Michigan.

Air Conditioning on NARDA Grand Rapids, Mich. Docket

GRAND RAPIDS, Mich. — Air conditioning, color television, kitchens, and building better sales people are among subjects scheduled for the second annual Michigan State NARDA meeting to be held here March 30 at the Pantlind hotel.

Some 325 dealers are expected to attend this meeting, according to Paul Bond, secretary of the Grand Rapids Radio & Appliance Dealers Association.

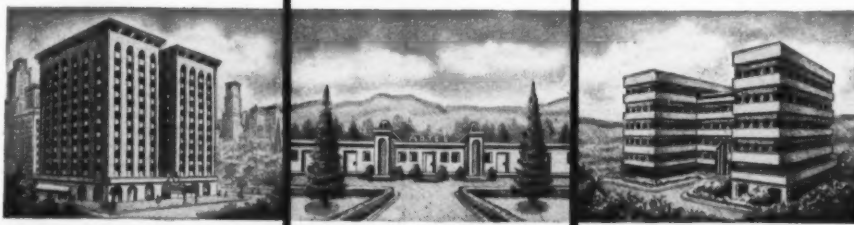
Speakers featured on the program, according to General Chairman Dick Evenhuis, president of the Grand Rapids association, will be:

E. A. Tracey, vice president and general sales manager, Mitchell Mfg. Co.; Mort Farr, recently named 1953 Brand Name Retailer-of-the-Year; D. F. Sembach, regional manager, Youngstown Kitchens; Mrs. Jessie Cartwright, home service director, Norge Div., Borg-Warner Corp.; A. W. Bernsohn, NARDA managing director; and C. C. Musburger, Billings, Mont. dealer, who will be the banquet speaker.

NARDA Director Paul Dettling, Jackson, Mich., will serve as meeting chairman during the program for the day, and Stuart Greenley, Flint, Mich., NARDA regional chairman for the state, will be chairman of the banquet.



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